

The Efficacy of Previewing and Providing Background  
Knowledge on EFL Reading Comprehension

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Except where otherwise indicated this  
thesis is my own work

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## Abstract

Research by Anderson (1977) Steffensen, Joag-Dev and Anderson (1979), Carrell (1987), Kang (1992) has shown that because of differences in culture or expertise, EFL students experience comprehension difficulty. However, when provided with prereading activities, their comprehension maximizes considerably (Carrell 1983, Taglieber 1988, Chen and Graves 1995). Research has shown that both providing background knowledge and previewing are effective for both L1 and L2 readers. (Pearson, Hansen and Gordon 1979, Birkmire 1985, Grabe 1991, Graves and Cooke 1980, Graves, Cooke and Laberge 1983, Chen and Graves 1995). ~~The findings of Chen and Graves (1995)~~ The latest research of Chen and Graves (1995) further demonstrates that previewing is significantly superior to providing background knowledge in improving comprehension of an American short story. ~~further demonstrate that previewing is significantly superior to providing background knowledge in improving comprehension of an American short story.~~ superior to providing background knowledge in improving comprehension of an American short story.

~~However, no comparable research has been carried out to examine whether preview and background knowledge differ in their effectiveness for improving comprehension in other text types. Also, so far, no research has been done on the longer-term effect of prereading activities. It is expected that information rehearsal will enrich preview and background knowledge and these in turn will further facilitate reading comprehension. This study will be a first attempt to investigate how information rehearsal interacts with preview and background knowledge in improving EFL reading comprehension.~~

This study, which builds on Chen and Graves (1995) aims (1) to examine whether previewing is superior to background knowledge for a text type other than narrative, (2) to examine whether information rehearsal enrich prereading activities so as to

~~This study, which builds on Chen and Graves (1995) is informed by the following three research questions: 1) Is previewing superior to background knowledge for a text type other than narrative? 2) Does information rehearsal enrich prereading activities so as to enhance the efficacy of preview and background knowledge? 3) Is the facilitative effect of schemata on reading comprehension increased when schemata are enriched?~~ enhance the efficacy of preview and background knowledge, (3) to examine whether the facilitative effect of schemata on reading comprehension increased

~~In this study, I used randomized experimental, control groups and immediate and delayed post test design. The immediate post test was conducted immediately after the groups received the prereading activities and the reading of the first text. The second test in which none of the groups (A, B & C) received the prereading activities, was administered 2 weeks after the immediate post test to measure if information rehearsal contributes to the longer term efficacy of preview and background knowledge. Data were analysed using the SPSS Package of statistical procedures.~~ when schemata are enriched

In this study, 78 non-English major Sophomore attending Yangzho University in mainland China were randomly assigned to one of

The results show first that in the short term, background knowledge is more effective than preview in improving EFL comprehension of documentary narrative. However, in the longer term, it's previewing rather than providing background knowledge that promotes EFL reading comprehension. Second, information rehearsal do have an effect on the efficacy of previewing and background knowledge. Before the first reading comprehension test, in the preview condition, general information about the content of upcoming text was presented to readers. In the background knowledge condition, detailed information about the content was given. In the control condition, there was no prereading treatment. The second test was administered 2 weeks after the first test in which none of the groups (A, B & C) had prereading activities.

The study has three implications for EFL teachers: 1) teachers are encouraged to help students to build their background knowledge by providing prereading activities, 2) teachers need to be aware of the necessity to elaborate on prereading activities by information rehearsal in a variety of relevant activities, 3) teachers are encouraged to develop their students content schemata which will benefit them long after their scholastic education ends.

## Table of Contents

Acknowledgements.....	ii
Abstract.....	iv
Table of Contents.....	vii
List of Tables.....	x
List of Figures.....	xi

### **Introduction .....1**

<b>Chapter 1 Review of the Literature.....</b>	<b>6</b>
1.1 Introduction.....	6
1.2 A Brief History of Models of Reading.....	7
1.2.1 Reading as a Bottom-up Process.....	7
1.2.2 The Psycholinguistic Model of Reading.....	8
1.2.3 The Bottom-up and Top-down Model of Reading.....	9
1.2.4 The Schema-Theoretical Model of Reading.....	10
1.3 Schema Theory.....	11
1.3.1 The Function of Schemata in the Process of Reading	
Comprehension.....	13
1.3.1.1 Ideational Scaffolding.....	13
1.3.1.2 Default Values.....	15
1.3.1.3 Allocation of Attention.....	15
1.3.1.4 Orderly Searches of Memory.....	16
1.3.1.5 Summary.....	17
1.4 The Rationale of Prereading Activities and Information Rehearsal.....	17
1.4.1 The Rationale of Background Knowledge.....	18
1.4.2 The Rationale for Using Previewing.....	20
1.4.3 The Role of Information Rehearsal.....	21

### **Chapter 2 Review of Empirical Studies.....23**

2.1 Introduction.....	23
2.2 Studies on Providing Prereading Activities which Facilitate ESL Readers' Comprehension.....	23
2.3 Research on Prereading Activities and L1 and L2 Readers.....	26
2.3.1 Research on Background Knowledge in L1 and L2.....	27
2.3.2 Review of Preview Research in L1 and L2 Readers.....	28
2.4 The Research Questions.....	30

<b>Chapter 3 Methodology of the Study .....</b>	<b>31</b>
3.1 Introduction.....	31
3.2 Research Design.....	31
3.2.1 Hypotheses and Subhypotheses.....	34
3.3 Instrument.....	37
3.3.1 Reading Selection.....	37
3.3.2 Two Prereading Treatments.....	38
3.3.2.1 The Preview Treatment.....	39
3.3.2.2 The Background Knowledge Treatment.....	41
3.3.3 Testing.....	42
3.3.3.1 The Construction of Comprehension Questions.....	42
3.3.3.2 The Reliability of the Test Results in the Two Tests.....	45
3.3.3.3 The Construction of Reading Comprehension Questions.....	46
3.3.3.3.1 Advantages and Disadvantages of Multiple Choice and True or False Questions.....	46
3.3.3.3.2 Standards for Constructing Multiple Choice and True or False Questions.....	47
3.4 Data Collection.....	47
3.4.1 Selection of Participants.....	47
3.4.2 Procedures of Data Collection.....	48
3.5 Data Analysis.....	50
3.5.1 Scoring.....	50
3.5.2 Choosing Statistics.....	51
 <b>Chapter 4 Results and Interpretation.....</b>	 <b>52</b>
4.1 Introduction.....	52
4.2 Results.....	52
4.2.1 Research Hypothesis 1.....	52
4.2.2 Research Hypothesis 2.....	55
4.2.3 Research Hypothesis 3.....	58
4.3 Discussion.....	64
4.3.1 Interpreting the Results of Hypothesis 1.....	64
4.3.2 Interpreting the Results of Hypothesis 2.....	67
4.3.3 Interpreting the Results of Hypothesis 3.....	70
 <b>Chapter 5 Future Research and Implications.....</b>	 <b>74</b>

5.1 Introduction.....	74
5.2 Suggestions for Future Research.....	74
5.3 Implications and Applications for EFL Reading Classrooms.....	77
5.3.1 Materials Selection and Reading Programs.....	77
5.3.2 Key Vocabulary Instruction.....	79
5.3.3 Prereading Activities.....	81
5.4 Concluding Statements.....	82
<b>References.....</b>	<b>84</b>
<b>Appendix A: Preview For Experimental Group A.....</b>	<b>96</b>
Background Knowledge Passage for Experimental Group B	
<b>Appendix B: Text One and Test One.....</b>	<b>101</b>
Text Two and Test Two	
<b>Appendix C: Three Groups of Ten Words and Phrases.....</b>	<b>116</b>
<b>Appendix D: Instructions to the Teachers in China for Conducting</b>	
Prereading Activities.....	117
Directions for the First Reading and Test and the	
Second Reading and Test	
<b>Appendix E: Answer Sheet.....</b>	<b>120</b>

## List of Tables

Table 3.1 Research Design.....	32
Table 4.1 The Mean Ranks of The Three Groups ( A, B & C) in Test 1.....	54
Table 4.2 Ryan Procedure: Comparison of Critical Values and Z Values of the Three Groups in Test 1.....	55
Table 4.3 The Mean Ranks of the Three Groups ( A, B & C ) in Test 2 .....	57
Table 4.4 Ryan Procedure: Comparison of Critical Values and Z Values of the Three Groups in Test 2.....	58
Table 4.5 Comparison of the Students' Performance in Group A (Preview) in Test 1 and Test 2 .....	59
Table 4.6 Comparison of the Students' Performance in Group B ( Background Knowledge) in Test 1 and Test 2.....	61
Table 4.7 Comparison of the Students' Performance in Group C in Test 1 and Test 2 .....	63

## List of Figures

Figure 1.1 A Possible Representation of the Chinese Candy-Buying Schema...	12
Figure 3.1 Four Information Rehearsal Processes Provide Access Routes to Information Input.....	33
Figure 4.1 Average Scores of the Three Groups (A, B & C) in Test 1.....	53
Figure 4.2 Average Scores of the Three Groups (A, B & C) in Test 2 .....	56
Figure 4.3 Average Scores of Group A ( Preview ) in Test 1 and Test 2 .....	60
Figure 4.4 Average Scores of Group B ( Background Knowledge) in Test 1 and Test 2 .....	61
Figure 4.5 Average Scores of Group C (Control) in Test 1 and Test 2 .....	63



## INTRODUCTION

Students of English as a foreign language experience considerable difficulty in comprehending English texts. One reason for this is that texts sometimes contain unfamiliar concepts or culture-specific elements (Tagliber, Johnson & Yarbrough, 1988). According to Fillmore (1997:45), writers generally assume a level of prior knowledge and cultural and real world experience when they write, depending on the background of the readers of their texts. It is difficult though for readers, especially for English Second language/ English Foreign Language readers, to comprehend materials that presuppose cultural background knowledge, and experiences that they do not already have. The following empirical research will give you a glimpse of the difficulties that ESL readers at different proficiency levels encounter when they are reading materials which require cultural schemata or expertise.

The research between the 1970s and 1990s on differences in culture or expertise reviewed here usually involves two groups of readers who read two passages on two topics, each of which is familiar to one group but unfamiliar to the other. These studies have reported strong effects of background knowledge on reading comprehension.

Anderson et al. (1977) used two passages of about 145 words each. Each passage could be given at least two distinct interpretations. One passage could be interpreted as being about either a convict planning his escape or a wrestler trying to break the hold of an opponent. The other passage could be interpreted as being about friends coming together to play cards or about the rehearsal of a chamber orchestra. The

passages were given to subjects from the physical education department and to subjects from the music department. The results indicated that the interpretation which people give to a message is influenced by their backgrounds. In discussing the implications of schema theory, Anderson et al. (1977: 378) state: "It may turn out that many problems in reading comprehension are traceable to deficits in knowledge rather than deficits in linguistic skill." Thus, it appears that the readers may not have the schemata needed to comprehend passages or they may have relevant schemata but do not know how to use them in comprehension.

A study by Steffensen, Joag-Dev and Anderson (1979) did not use language specifically as a variable, since the participants were American native English speakers and Indians (natives of India) whose English proficiency was very high. However, the study addressed the issue of cultural differences in background knowledge and how this knowledge assists or interferes with comprehension. The researchers presented separate letters about an American and an Indian wedding to university students whose native culture was either American or Indian. They had the students read descriptions of the weddings. Since wedding customs differ in America and India, members of both groups read the descriptions from the other culture more slowly than the one from their own. They not only remembered more details of the weddings in their own culture and remembered them more accurately, they were also able to draw correct inferences from the description of the weddings in their own culture. This suggests that readers make use of a wedding schema that is specific to their culture in interpreting the meaning of a text and in storing the text in memory.

Participants also often drew incorrect inferences from the description of the wedding from the other culture, based on the wedding schema in their own culture. For example, the description of the American wedding included a mention that the bride wore her grandmother's wedding gown. An Indian participant reported, in the recall protocol, that the dress was unfortunately, old and out of fashion, a comment which would fit the Indian view that it is important for the bride's family to show their economic status by providing a new, fashionable wedding sari for the bride to wear. American readers, in contrast, emphasized the aspect of family tradition involved in the bride wearing her grandmother's dress, which fits with the schema for an American wedding.

In addition, recall protocols were often vague in areas where the readers did not have schemata. For example, the text on the Indian wedding contained details about the gifts exchanged by the families. Indian respondents not only tended to remember what the gifts were, they commented on the significance of the gifts. In contrast, recalls by Americans of the gifts exchanged were vague and did not include any information about the significance of the gifts.

This study is an indication that, even in the native language or a strong second language, a reader's knowledge of the schematic background of a text greatly aids comprehension. In addition, lack of an appropriate schema for a text hampers accurate comprehension.

Johnson's (1981) study investigated the effects of text complexity and cultural background on comprehension. She found that for second language readers, cultural background had a greater effect on their ability to understand the text than did semantic and syntactic complexity. Johnson had American participants and intermediate and advanced Iranian participants read simplified or unsimplified versions of two passages, one based on American folklore and one on Iranian folklore. For Iranians, she found an interaction between cultural background and language complexity for the total number of events recalled. Like the Iranians, Americans produced more inferences from the culturally familiar story than the unfamiliar one.

The results of this study indicate firstly that Iranian second language readers make use of domain-related schemata in their text comprehension, and secondly that schemata are more important than language complexity in making inferences from the text.

Carrell's (1987) study involved 28 Muslim Arabs and 24 Catholic Hispanic ESL students of high-intermediate proficiency enrolled in an English program at a mid-western university in America. Each student read two texts, one with Muslim-oriented content and the other with Catholic-oriented content. After reading each text, the subjects answered a series of multiple-choice comprehension questions and were asked to recall the text in writing. Analysis of the recall protocols and scores on comprehension and recall suggested that participants better comprehended and remembered passages that were in some way more familiar to them.

and what the relationships are among the slots (Graesser, Woll, Kowalski & Smith, 1980). There are two broad types of schemata (Carrell & Eisterhold 1983): content schemata and formal schemata. Content schemata, which contain general or specific information on a given topic, come through real-life experiences. Formal schemata contain information about how rhetoric is organized and come from the knowledge of different text types and genres.

2. Top-down refers to the making of predictions about the text based on real-world knowledge schemata then checking the text for confirmation.

3. Bottom-up refers to the decoding of individual units (e.g. phonemes, graphemes, words) and building textual meaning from the smallest units to the largest, and then modifying preexisting background knowledge and current predictions on basis of information encountered in the text (Carrell 1988b: 101)

An interesting study was carried out by Kang (1992). Kang's study examined how second language readers filter information from second language texts through culture specific background knowledge. Korean graduate students with advanced English proficiency read stories and answered questions. A think-aloud protocol assessing their understanding and inferences indicated an effect of culture specific schemata and inferences upon text comprehension.

Although all the variables and factors surrounding the issues of how culture shapes background knowledge and influences reading are not fully understood, there is agreement in these studies that background knowledge is important, and that content schemata play an integral role in reading comprehension.

Overall, ESL readers appeared to have a higher level of comprehension when the content was familiar to them. Given this, second language readers who do not possess the content schemata that writers of teaching materials of western countries generally assume will experience comprehension frustration and difficulties.

The purpose of this Study

This study will be a first attempt to investigate how information rehearsal interacts with preview and background knowledge on EFL reading comprehension. Similar research has been carried out by Chen and Graves (1995)

Definition of key Terms

1. Schemata (the single form is schema) are previously acquired knowledge structures, made up of "slots" or "placeholders" (Anderson, Reynolds, Schallert & Goetz 1977). Schemata include information about constraints on what can fill a particular slot, including default values to be used if the slot is not filled (Anderson, 1977)

# 1

## REVIEW OF THE LITERATURE

### 1.1 Introduction

As discussed previously, empirical studies substantiate that lack of or inability to make use of cultural and expertise schemata can be sources of problems in ESL/ EFL reading comprehension. It is obvious that schemata hold much promise for our understanding, especially as it occurs in a second or foreign language and culture. Therefore, this chapter discusses different views of the reading process, schemata and what specific functions schemata may serve, and the rationale behind the prereading activities and information rehearsal.

First, I will describe how models of the reading process have evolved recently from passive, to active, to interactive. The interactive model of reading includes the psycholinguistic model of reading, top-down and bottom-up model of reading and schema-theoretical model of reading. I then introduce schemata and illustrate the way in which schemata function in reading comprehension. Finally, I describe the rationale supporting two prereading activities--providing background knowledge and previewing and the role of information rehearsal.

## 1.2 A Brief History of Models of Reading

As far back as 1932, Bartlett (cited in Carrell & Eisterhold 1983) is credited with first proposing the concept of schemata. He arrived at the concept from studies of memory he conducted in which subjects read a story from an unfamiliar culture. Their memory of the story changed over time to fit the schemata of their own culture. He suggested that memory takes the form of schemata which provide a mental framework for understanding and remembering information. Yet, it was not until three decades later that wider interest in Bartlett's theories developed.

Since the 1970s, there has been a revival of interest among psycholinguists and scholars in Bartlett's schema theory. One area in which schema theory has stimulated a great deal of interest is in the area of reading. In the following section, I will explore how models of the reading processes have evolved recently from passive to active, to interactive. What is meant by bottom-up and top-down processing? What are the different senses in which the term 'interactive' is used to describe the ESL reading process?

### *1.2.1 Reading as a Bottom-up Process*

The models of LaBerge and Samuels (1974) propose that reading is a process of building symbols into words, words into sentences, and sentences into overall meaning (1974: 34). The model reflects traditional attitudes toward reading, which are referred to as a bottom-up process <sup>(see p. 9)</sup> because the reader begins with the lowest level, features of symbols, from which the symbols are identified (Gough 1972, cited in David and William 1988: 223). According to the models of the bottom-up (e.g. Plaister 1968,



Rivers 1964, LaBerge & Samuels 1974), second language reading is "a process of building up a meaning for a text from the smallest units at the "bottom" (letters and words) to large units at the "top" (phrases, clauses, intersentential linkages)" (Carrell 1988a: 2). However, many studies (e.g. Stevens and Rumelhart 1975, Schank 1973) show that lower level processes (identification of words and letters) are influenced by higher level processes (knowledge about the context) (Stanovich 1980: 34).

### *1.2.2 The Psycholinguistic Model of Reading*

Goodman's psycholinguistic model of reading (1970) was among the first to spark the recent view of reading as an interaction among different levels of processing, rather than a bottom-up process. It introduced the idea that reading, far from being passive, is an active process, with emphasis on both, active and process. Goodman has described reading as a "psycholinguistic guessing game," in which the "reader reconstructs... a message which has been encoded by a writer as a graphic display." In this model, the reader does not need to (and the efficient reader does not) use all of the textual cues. (Goodman, 1970: 111) The more able the reader is to make correct predictions, the less confirming through the text is necessary (Goodman, 1970: 113). According to Goodman, what happens "behind the eye" is as important as what is on the printed page (Goodman, 1970: 113)

Smith (1971) has been another strong and influential proponent of the psycholinguistic model of reading. He has emphasized the role of what he refers to as non-visual information. Smith characterizes the role of non-visual information as reducing alternatives in reading. This allows readers to make predictions about what is

coming up in the text based on syntactic, semantic, and background information (Smith 1971: 65-67).

Although both Goodman and Smith do emphasize that what happens "behind the eye" and non-visual information is as important as what is printed on the page, they do not deal with schema theory directly (Carrell 1988a : 2-3).

According to Carrell and Eisterhold (1988:74), it was Coady who elaborated on the psycholinguistic model of reading (Coady 1979 cited in Carrell and Eisterhold). He suggested a model in which the ESL reader's background knowledge interacts with conceptual abilities and process strategies to produce comprehension (Carrell and Eisterhold 1988: 74). Coady emphasizes the role of background knowledge in reading comprehension.

### *1.2.3 The Bottom-up and Top-down Model of Reading*

Beginning with Rumelhart (1977), researchers have proposed interactive models of reading, arguing that lower-level and higher-level processes work together interactively as parts of the reading process (Grabe 1988: 58).

Rumelhart's interactive-activation model (1977) and Stanovich's interactive-compensatory model (1980) view reading as interactive, a combination of top-down and bottom-up processing. Top-down processing refers to the making of predictions about the text based on background and expectation then checking the text for confirmation. Bottom-up processing refers to the decoding of individual units (e.g. phonemes, graphemes, words) and building textual meaning from the smallest units to the largest,

and then modifying preexisting background knowledge and current predictions on the basis of information encountered in the text (Carrell 1988b : 101) . According to these interactive models, the interactive processes of reading, which allow processing at one level (e.g. word perception) to interact with processing at another level (e. g. semantic knowledge), are superior to either strictly bottom-up, decoding or strictly top-down, predicting (Samuels and Kamil 1988: 27-31).

#### *1.2.4 The Schema-Theoretical Model of Reading*

Anderson and Pearson (1988) introduced another type of interactive model of reading, namely a schema-theoretical model. They show how reading comprehension involves the interaction between old and new information. They focus on “how the reader’s schemata, or knowledge already stored in memory function in the process of interpreting new information and allowing it to enter and become a part of the knowledge store” (1988: 37).

The schema-theoretical model of reading, along with the psycholinguistic and interactive models of reading, is an effective counterweight to bottom-up models of reading. As Anderson (1984) has pointed out, schema theory has challenged our thinking about issues such as how information in a text is assimilated, how inferences are made, and how a text is remembered. The following sections will address schema theory specifically and illustrate the way in which schemata function in providing ideational scaffolding, default values, retrieving information in memory and allocating attention during comprehension.

### 1.3 Schema Theory

According to Anderson, Reynolds, Schallert, and Goetz (1977), schemata are previously acquired knowledge structures, made up of "slots" or "placeholders". Schemata include information about constraints on what can fill a particular slot, including default values to be used if the slot is not filled (Anderson, 1978), and what the relationships are among the slots (Graesser, Woll, Kowalski, & Smith, 1980). Schemata tell us what is essential, expected and possible in a certain situation (Van Dijk, 1977). Schemata are arranged hierarchically from the most general to the most specific information (Anderson, 1978).

There are two broad types of schemata (Carrell & Eisterhold 1983): content schemata and formal schemata. Content schemata, which contain general or specific information on a given topic, come through real-life experiences. Formal schemata contain information about how rhetoric is organized and come from the knowledge of different text types and genres. The latter is not of concern in this study, which focuses only on the role of content schemata in reading comprehension.

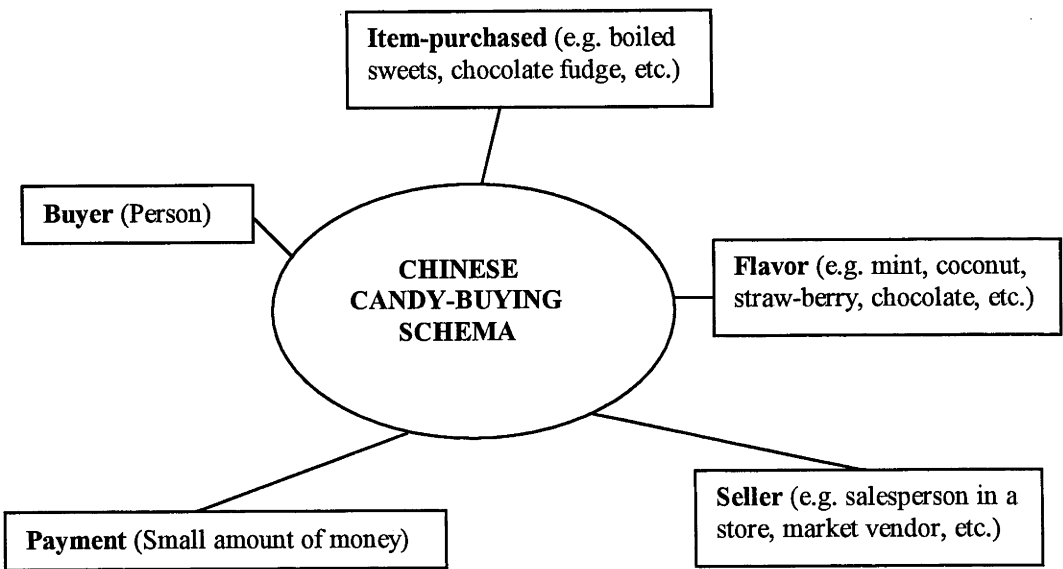
Although definition of a schema is not consistent and may refer to a variety of different constructs, the various definitions have several points in common (see Rumelhart & Ortony, 1977). Rumelhart and Ortony define a schema simply, as a general knowledge structure used for understanding. Recently, Medin and Ross (1992) clarified Rumelhart and Ortony's ideas on schema in some detail:

A schema is knowledge. It does not refer to information in the world, but rather to one's knowledge about the world. Second, a schema is general. It does not encode information about one particular situation but rather about a particular type of situation. Third, a schema is structured; that is, a schema does not just consist of a set of facts but also includes how these

facts are related. This structure is part of what allows a schema to be used for inferring. Fourth, a schema is used in comprehension. The structure of the schema is such that it includes how the knowledge is related in this type of situation, but it does not include information about any exact situation (Medin and Ross, 1992: 346-347).

Figure 1.1 provides an illustrative example of a schema for candy buying in China. Although such a schema would contain all the knowledge about candy buying, the figure presents only a simplified version. A schema is viewed as consisting of a frame that includes slots for particular information (Anderson and Pearson 1988: 43). So, a candy-buying frame would have slots for the buyer, what kind of candy was purchased (e.g., both the form and the flavor), the seller, and the amount paid. Understanding this typical candy buying situation "consists of filling in these slots" (Anderson and Pearson 1988: 34). Although the schema for candy-buying would include knowledge that someone buys some type of candy, the schema is general and would not contain the particular person or particular candy, as indicated below:

**Figure 1.1: A Possible Representation of the Chinese Candy-Buying Schema**



### *1.3.1 The Functions of Schemata in the Process of Reading Comprehension*

For the purpose of my study, I am interested in the use of content schemata in the process of reading comprehension. Schema theory holds that no text, either spoken or written, carries meaning by itself; rather a text only provides directions for readers as to how they should construct meaning from their own schema (Anderson, 1984:248). Comprehension involves filling in a schema's slots with particular information and making inferences based on the information that is given and on information from the schema (see Anderson & Pichert 1978). In the following sections, we will see various ways in which schemata may function in achieving comprehension. They provide "ideational scaffolding", make default inferences, allocate attention and retrieve information from memory.

#### 1.3.1.1 "Ideational Scaffolding"

A schema embodies a structural organization of the information it represents. If most text information fits into the slots within the schema, the text is readily comprehended with little mental effort (Anderson, Spiro & Anderson 1978). In this sense, the schema is a "scaffold" in aiding comprehension. I again use "the Chinese candy-buying schema" to show how the ideational scaffolding functions to fill in the slots with particular information when comprehension actually happens, and provide a relevant text based on my diary.

Tomorrow is Huahua's wedding. After going through ideas with her father, she finally decided to buy some candies for her guests. Huahua went to the candy shop which, for generations, has been known as having the best candy for weddings. It's got to be 'Double Happinesses' candy. As soon as she entered the shop, she was happy to see that the shelf was stocked with all kinds of candies in a variety of colors and flavors. Although it seemed a little bit crowded, she did not have to wait in a long queue as there were 6 checkouts and 6 cashiers. The cost was not very high, about \$ 5.00 per bag of candy. She bought

about 160 bags. Each bag had boiled sweets, chocolate fudge etc. in a variety of flavors, such as mint, coconut, chocolate. When she went through the checkout, the sales girl said that she hoped that 'Double Happinesses' would sweeten up her wedding and also her life.

The following analysis shows that most of the information in the diary generally fits in the candy-buying schema and provides readers with confidence to comprehend the diary.

As mentioned above, the frame has at least five slots in a reader's schema about buying candy. When a reader reads the diary, the five slots in his/her schema about buying candy can be "instantiated" (Anderson & Pearson 1988:42) with particular information. For example, <the buyer> slot is filled by Huahua. Boiled sweets and chocolate fudge are consistent with the <item-purchased>. 'Double Happinesses' is obviously a well-known name of a candy for weddings in China. The mint, coconut and chocolate fit with the slot <flavor>. The slot <payment> can be instantiated with \$ 5.00.

When a schema is activated and used to interpret the diary, the slots are "instantiated" for particular information, as shown above. In addition to filling in the slots with particular information, the slots contain restrictions about what information can fill them (Anderson 1978). For example, in the candy-buying schema, it is not permissible to have the <buyer> slot filled by "mint" or to have the candy flavor filled by "Huahua."

From the above example, we can see how a schema functions in providing ideational scaffolding for understanding the diary passage by understanding appropriate slots and filling in the slots with the details of the particular information. Since most of the information in the diary fits into slots within the schema of candy-buying, the reader

can easily draw the conclusion that the diary entry is probably about candy-buying rather than an advertisement for 'Double Happinesses'.

#### 1.3.1.2 Default Values

A schema also contains default values for each slot (Minsky 1975). If a text fails to mention some piece of information, the reader fills the slot with a value that he/she knows to be typical in the slot (Minsky 1975). For example, if a reader reads, *when she went through the checkout, the salesgirl said that she hoped that 'Double Happinesses' would sweeten up her wedding and also her life*. A reader can assume that she paid for the candy (a default value) rather than stole it. The writer does not mention the procedure of paying money at the checkout, but a reader can infer that there was a procedure of paying money involved. In this way, a reader's schema can provide the basis for making inferences that go beyond the literally stated information to complete the meaning of the text.

#### 1.3.1.3 Allocation of Attention.

Schemata used in selective attention have been defined as guiding readers' deliberate decisions and actions designed to focus cognitive resources on certain kinds of information in a text in order to comprehend and remember them (Wilson & Anderson 1986:35)

According to Mayer (1989: 46), meaningful learning depends on three basic processes: selecting, organizing, and integrating information. The first process, selecting, involves paying attention to certain information and particularly focusing



attention on the information on learners' understanding of a target passage. The second process, organizing, involves arranging the units of selected information into a coherent mental structure. Mayer (1989: 47) refers to this step as "building internal connections" or constructing logical relations between ideas in the text. The third process, integrating, involves connecting the coherently organized information to existing cognitive structures. This process is also referred to as "building external connections" because it entails linking information from the text to information that is external to the text but internal to the reader (Mayer, 1989: 46). The more elaborate and rich the internal and external connections between units of information, the more available and accessible the information is for later use (Prawat, 1989: 6-7).

#### 1.3.1.4 Orderly Searches of Memory

In addition to the important role that schemata play in providing ideational scaffolding, default value and guiding readers for allocating cognitive resources, "schemata are assumed to be the guiding forces behind remembering as well" (Rumelhart 1980: 49). A schema has slots for certain types of information. When the text contains certain types of omission, a schema can guide readers to seek the information that needs to be recalled to function as orderly searches of memory while they are reading (Anderson & Pichert 1978).

The following personal example illustrates how a schema functions in retrieving information. Some time ago, I attempted to find an article which I had already read in the library. I needed to instigate a search. However, in this case, the search was not random. It was guided by schemata that represented the layout of the library. Knowing the layout of the library, I knew the typical location of the journal and, therefore, where

to find it. Note that the location of this journal was not my goal in the memory search for the article. When I found the journal, I used my knowledge of its structure to guide me to the appropriate location of that particular article in the journal. This example illustrates the search paths through memory while trying to recollect information after a long delay.

#### 1.3.1.5 Summary

As discussed previously, the analysis of "my diary" given earlier illustrates generally how the two functions of schema are supposed to operate. With the help of ideational scaffolding, a reader can have confidence in comprehending the text with little mental effort. With the help of default value, a reader can comprehend questions after the text is read, even when the required information is not presented as input explicitly in the text. In this way, in providing ideational scaffolding and default value, a schema can be used as a solution to the problems of inferencing in comprehension. Mayer's (1989) three basic processes of learning indicate that readers can select the important information relevant to the text. The analysis of "search paths of an article" illustrates how schemata function in retrieval of information.

### **1.4 The Rationale of Prereading Activities and Information Rehearsal**

Given the role of schemata in helping readers to comprehend and remember what they have read, then the question is: "can we bridge the gap between the text content and the reader's lack of schemata by providing prereading activities?" The empirical research in the following chapter provides an affirmative answer to this question. Then, what is the rationale behind prereading activities? The following

sections engage this question. My discussion focuses on the rationale of two prereading activities--providing background knowledge and previewing in both L1 and L2 reading. In addition, according to Craik and Lockhart (1972), information rehearsal is considered important in substantial long-term memory of previously acquired knowledge. Thus, the value of using information rehearsal will also be discussed.

#### *1.4.1 The Rationale of Background Knowledge*

According to Chun and Plass (1997: 68), schema theory for L2 reading has been investigated extensively and appears to be a very useful notion for describing how prior knowledge is integrated in memory and used in higher-level comprehension processes (1997: 68). The theory provides a strong rationale for providing background knowledge. Background Knowledge is used to aid comprehension and is supported by two cognitive theories; e.g. advance organizers and Langer's Prep (Pre Reading Plan) and some additional conclusions based on empirical research.

1. Advance organizers (Ausubel 1960) emphasize the relationship between existing cognitive structures and new learning. There are two kinds of advance organizers. Expository organizers provide a basic concept "at the highest level of abstraction" (Ausubel 1960: 252), that is the scaffolding (as discussed earlier p.13) which enables learners to relate new knowledge to what they already know, thus assimilating new information. Comparative organizers are used most with relatively familiar material. They are designed to discriminate between old and new concepts in order to prevent any confusion which may be caused by similarity. These two kinds of advance organizers may be presented as a prereading activity in various ways depending on the teacher and the lesson. According to Ausubel (1960), advance

organizers may include: a 200-500 word prose passage, a graphic presentation, a thematic organizer in the form of a picture, or a slide-verbal presentation. Advance organizers provide students with a framework for understanding new material. The background knowledge is not written at a higher level of abstraction than the new materials and this provides students with an organizational framework for comprehending a text.

2. Another applicable theory which lends support to the use of background knowledge is Langer's (1980) PreP (Pre Reading Plan). In the PreP, teachers create a condition that allows students to draw upon what they already know about a topic, and group discussion encourages students to reflect upon the appropriateness of their ideas in relation to a specific reading task. In this view, from background knowledge readers can select key words strongly associated with conceptual and culture-specific knowledge that is central to the understanding of the text to be read.

3. Pearson, Hansen, and Gordon (1979) generalize based on their findings (see empirical studies in Chapter Two) that students who have better developed background knowledge for a particular topic will understand and remember more than those with weaker background knowledge. Hayes and Tierney (1982) found that presenting background information related to the topic helped readers learn from the text regardless of how that background information was presented on how specific or general it was. Taglieber et al. (1988) note that providing background knowledge is a device for bridging the gap between the text's content and the reader's schemata. Their conclusion is significant for reading materials containing "culture-specific elements which can not be accessed without prior cultural knowledge," furthermore, their conclusion supports the

notion of comprehension as a process of integrating new information with preexisting schemata (Chen & Grave 1995: 665).

#### *1.4.2 The Rationale for Using Previewing*

Providing a preview as a prereading activity recognizes the different background knowledge that will influence how students read and learn from a text. Previewing can promote students' engagement and interest to anticipate the text. Previewing is used to aid comprehension and is supported by two theoretical concepts which account for facilitating effects of previewing: e.g. compensatory effects of top-down strategies, and Mayer's 'aids' (1989) for text comprehension and some additional arguments based on empirical research.

1. Stanovich's (1980) interactive-compensatory model (see the discussion in this Chapter P. 9) lends support to the value of previewing. According to this model, reading is an interactive process in which readers may also try to compensate for deficiencies at one level, e.g., word recognition, by relying more on a source at a lower or higher, e.g., contextual knowledge (Stanovich, 1980: 32). Therefore, providing readers with top-down semantic and structural information they may not acquire from their bottom-up processing of the text is important.

2. Another applicable theoretical construct is Mayer's (1989) 'aids' for text comprehension. According to Mayer (1989: 46), an 'aid' for text comprehension is intended to support the reader's building of internal connections among the units of the information presented, for example, organizing the presented information into a coherent structure of logical relations among idea units in the text. In this view,

previews can help readers create and remember an interpretation of a text by providing them with a summary related to the target text before they read.

3. Additional arguments have been made for the use of previewing by Graves et al. (1983), McCormick (1989), Dole et al. (1991) and Chen and Graves (1995). Graves et al. (1983) note that previews can give readers a brief description of the story's theme which helps them to understand characters, setting and point of view. McCormick (1989) argues that previews aid students in their reading by providing a purpose-setting question or directions for reading. Dole et al. (1991) maintain that previews can motivate students to make connections between topics to be read and their own experience. They also argue that a preview is helpful because it can focus students' attention on only global information. Chen and Graves (1995) note that preview can help students build their knowledge about a story before they read it. Complicated settings, events, or characters can lead to a difficult reading for students. Therefore, the story preview can give readers this information in a framework to understand the characters and events at the text level and beyond.

#### *1.4.3 The Role of Information Rehearsal*

Among the four functions of the schemata in reading comprehension stated earlier (pp.13-17), the function of retrieval of information is determined by the level at which information is rehearsed ( Craik and Lockhart 1972). According to Craik and Lockhart (1972: 679), deep, semantic rehearsal is associated with higher retention of information input. Retention is viewed as a function of the extent to which the information input is elaborated (McDaniel 1984: 46). Memorability of the contents of

information input then, could be said to depend on the richness with which they are elaborated. (McDaniel 1984: 47)

Information Rehearsal has been identified as the central mechanism by which information is transferred from a transient short-term store to a more permanent long-term memory and also has been formally defined simply in terms of repetition (Waugh & Norman 1968; Atkinson & Shiffrin, 1968;). More recently, theorists have broadened the scope of the term "rehearsal" to "encompass more than just rote repetition" (Dark & Loftus 1976: 480). "Rehearsal can be applied as a label to any active processing that keeps information available in consciousness such that the information can be accurately recalled at any time during which it is being rehearsed." (Dark & Loftus 1976: 480)

The power of rehearsal, characterized in this way, has been demonstrated in several studies on delayed comprehension (Bransford and Johnson 1972; Gernsbacher 1990). These studies indicate that allowing overt repetition leads to better performance on a delayed comprehension test than does preventing rehearsal. Thus, there is support for the concept of information rehearsal as a mechanism that results in transfer of information to a more permanent long-term memory store.

# 2

## REVIEW OF EMPIRICAL STUDIES

### 2.1 Introduction

The rationale behind prereading activities has been discussed previously. Prereading activities are used to help readers, particularly ESL readers, to build up their store of culture and background knowledge. This chapter reviews empirical research providing insight into how prereading activities enable ESL readers to minimize reading difficulties and maximize comprehension. Towards the end of this chapter, I outline the purpose of my research based on the latest research of Chen and Graves (1995) and similar research.

### 2.2 Studies on Providing Prereading Activities which Facilitate ESL Readers' Comprehension.

Research between the 1980s and 1990s on prereading activities usually involved examining the readers' knowledge by either providing or not providing a background picture, a title, or a perspective for subjects when a text required culture-specific knowledge and expertise.



Hudson (1982) looked at the effects of different prereading exercises intended to activate schemata on reading performance of beginning, intermediate and advanced students, primarily Iranians. In one condition, students were shown pictures related to the text, which they discussed. Afterwards, students privately generated predictions about the content of the text. In a second condition, students were given a list of vocabulary words and definitions. Both of these groups answered questions about the content of the text. In a third condition, students read the text, answered questions about it, read the text again, and answered the same questions again. Scores were significantly higher for the first condition for beginning and intermediate students. There was no difference for advanced students. Hudson interpreted this to indicate that advanced readers were able to activate schemata without help, but at the lower levels, some help in activating schemata was necessary. This study indicates that prereading exercises are of some use to beginning and intermediate students.

Carrell's study (1983) investigated three components of background knowledge using three groups of subjects from different cultural backgrounds: a group of undergraduate students who were native speakers of English, a group of EFL students and a group of ESL students both of different backgrounds. The three separate components of background knowledge tested were: context (the presence of a title and a picture page preceding the passage); transparency (the presence of concrete lexical items within the text which provide textual cues to the content area of the text); and familiarity (the presence within the reader of prior knowledge or experience of the content of the text). Subjects were assigned to one of the four conditions: context-transparent, context-opaque, no context-transparent and no context-opaque. Each subject was asked to read and recall two passages which occurred in two versions: one familiar and one novel. It was found that the way native readers comprehended the texts

was affected by all three components whereas that was not the case for non-native readers. Carrell concluded that native speakers make use of contextual cues to do top-down processing, and that, at least in short term memory, novel information is more memorable. The non-native speakers in Carrell's study, on the other hand, were not particularly proficient at either top-down or bottom-up processing. This brings up a problem in doing schema research with non-native speakers. The results indicate that second language readers have not made use of schemata that they have, or that they have activated an inappropriate schema.

Taglieber et al. (1988) had a group of EFL Brazilian students read four different reading passages and answer an 8-item open-ended test and a 10-item multiple choice test. All subjects received all four treatments which consisted of three different prereading activities: pictorial context, vocabulary pre-teaching and pre-questioning. There was also a control condition in which there was no prereading activity. As was hypothesized, subjects' comprehension scores were found to be higher when the reading was preceded by one of the prereading activities than when it was not. In addition, vocabulary preteaching was found to be less effective than the two other prereading activities.

Chen and Graves (1995) investigated the effects of previewing and providing background knowledge necessary for Taiwanese college students' comprehension of American short stories, and at the same time investigated the effects of attitude questionnaires. In this study, 243 non-English major freshmen were randomly assigned to one of four treatment groups and read two short stories. Before reading each story, one group listened to a 200-word preview, a second group listened to a 200-word presentation of background knowledge, and a third group listened to both the preview

and background knowledge presentation. The fourth group read each story without any prereading assistance. Results showed stronger positive effects of providing preview and combined treatments and weaker positive effects of the background knowledge treatments. Students' responses to a semantic differential and an open-ended attitude question showed that they responded positively to all experimental treatments.

In short, it is by pre-reading activities that readers, particularly ESL readers build up their store of cultural and background knowledge. Perhaps this is how most ESL learners eventually master English, and also come to have the kind of cultural background and schemata (Rumelhart, 1980) that writers assume readers have to interpret their writings.

### **2.3 Research on Prereading Activities and L1 and L2 Readers**

Research on L1 reading comprehension suggests that prereading activities can be used to provide necessary background knowledge for particular reading tasks (Dole, Valencia, Greer, & Wardrop, 1991). Prereading activities may help students process reading tasks with more meaningful anticipation and cognitive readiness than had the prereading preparation not occurred (Langer 1980: 151).

For L2 students, Carrell (1983) suggests that teachers can use prereading activities such as text previewing, pre-teaching unfamiliar vocabulary, and providing prereading questions. And also the results of Chen and Graves (1995) make a strong argument that providing preview and background knowledge both have a positive effect on EFL students' reading comprehension.

In order to be able to build on Chen and Graves' (1995) research, my further discussion will focus on the two prereading activities--providing background knowledge and previewing used in both L1 and L2 research. First, I will review research on background knowledge in L1 and L2, and then preview in L1 and L2.

### *2.3.1 Research on Background Knowledge in L1 and L2*

Pichert and Anderson (1977) had readers pretend they were either burglars or homebuyers before reading about what two boys did at one of the boys' homes while skipping school. This study found that when reading the text, readers focused more on the information relevant to their assigned roles. For example, pretend burglars were more likely to learn that three 10-speed bikes were locked in the garage, and that there were collections of coins and paintings. Pretend homebuyers were more likely to learn about the wall to wall carpeting and spiral staircase. Anderson and Pichert (1978) carried this research further by asking readers to switch perspectives after their first attempt to recall. Subjects were able to recall previously unrecalled information important to their new perspective, but unimportant to their old perspective. Anderson, Pichert, and Shirey (1983) replicated these findings and discovered there was still an effect for the perspective shift even when the task was carried out two weeks after the initial reading. Anderson et al. (1983) concluded that a schema influences learning and memory when activated before reading, and retrieval when accessed after reading.

Birkmire (1985) had music and engineering students read three passages, one about canaries, one about music, and one about engineering. For both groups of subjects, the canary passage contained highly familiar information. For the music students, the information in the music passage was familiar, whereas the information in

the engineering passage was unfamiliar; the opposite was true for the engineering students. Birkmire found the music students spent less time in comprehending the passages on music and the canary than the passage on engineering; the opposite was true for the engineering students. This finding suggests that when prior knowledge is consistent with the target text, comprehension is easier.

Pearson, Hansen and Gordon (1979) tested the comprehension of second grade children with high and low knowledge on a passage about spiders. The children differed on spider knowledge but not on IQ and achievement test scores. Both explicit and implicit questions were asked to assess comprehension. The high-knowledge group performed significantly better overall, mainly due to their ability to answer the implicit questions. This finding suggests that comprehension requiring integration of text and world knowledge may be especially facilitated by strong knowledge of domain content.

Johnson (1982) compared ESL students' recall on a reading passage on Halloween. ESL students at the university level from 23 countries read a passage on the topic of Halloween. Before they read the passage, Johnson involved them in a Halloween celebration. Results of recall protocols suggested that the subjects' experience of the Halloween celebration prepared them for comprehension of the more unfamiliar information about Halloween in the passage.

### *2.3.2 Review of Preview Research in L1 and L2 Readers*

Previewing is another prereading activity used to provide introductory information about the content of an upcoming text. Almost 20 years ago, Graves (Graves, Cooke and Laberge 1983) created short story previews which were designed to

provide students with essential background information that they needed to understand new materials. Two separate experiments (Graves & Cooke, 1980; Graves, Cooke & LaBerge, 1983) involving upper elementary, junior high, and senior high school students yielded significant results for both high and low skilled readers as measured by explicit and implicit multiple-choice questions, story recall, or short answer comprehension questions. Although these narrative previews involved more than general knowledge, their results suggest that increasing a student's knowledge may be an important step toward improved comprehension. The effects of previewing expository texts were further investigated by McCormick (1989) and Dole et al. (1991). The results of these studies show that previews can be effective with narrative as well as expository texts, and with easier as well as more difficult material.

The studies reviewed above all investigated the effect of previews on L1 readers' comprehension of English. Raman (1990 cited in Chen and Graves 1995) investigated the effects of previewing for difficult short stories on Malaysia University first year students' comprehension. The results show students who received the preview treatment comprehended significantly better than the control group who did not receive preview.

Over five years later, the effects of previewing an American short story were further investigated by Chen and Graves (1995) with Taiwanese college students. The results by Chen and Grave showed that previewing is the more effective treatment compared to providing background knowledge, and the combined treatment, thus, makes a strong argument in favor of previews.

## 2.4 The Research Questions

Previous research suggests that providing both previewing and background knowledge is effective for both L1 and L2 readers. The latest research of Chen and Graves (1995) shows that previewing was significantly superior to background knowledge in helping Taiwanese College students' understanding of an American short story. However, no comparable research has been carried out to examine whether preview and background knowledge differ in their effectiveness for promoting comprehension in other text types. Also, so far, no research has been done on the long-term effect of prereading activities. It is expected that information rehearsal will enrich preview and background knowledge and in turn contribute to delayed effect of preview and background knowledge. Therefore, this study will be a first attempt to investigate how information rehearsal interacts with preview and background knowledge on EFL reading comprehension. Specifically, my research questions are:

1. Is previewing superior to background knowledge for a text type other than narrative ?
2. Does information rehearsal enrich prereading activities so as to enhance the efficacy of preview and background knowledge?
3. Is the facilitative effect of schemata on reading comprehension increased when schemata are enriched?

# 3

## METHODOLOGY OF THE STUDY

### 3.1 Introduction

This chapter outlines the research design and methods which guided this study. The research methods presented in the chapter are divided into three parts. In the first part, the instrument is discussed, which includes reading selection, treatment and testing. In the second part, I discuss data collection, including selection of participants, and the procedure of data collection. In the third part, the approach to data analysis is discussed, including scoring and choosing statistics.

### 3.2 Research Design

In this study, I used randomized experimental, control groups and immediate and delayed post test design as set out schematically in Table 3.1.

By "randomized experimental, control" groups, I mean I randomly selected and grouped 26 students from each of three intact classes into 3 groups (A, B & C). Groups A and B were experimental groups; Group C was a control group. The two experimental groups received prereading treatments before the first test, (experimental group A received preview treatment, experimental group B received background knowledge



treatment). The control group C did not receive any prereading treatment before the first test.

By "immediate and delayed post test" I mean that test 1 occurred immediately after the two experimental groups (A & B) received prereading activities and the control group (C) received its instructions (see Appendix B); and test 2 in which none of the groups (A, B & C) had prereading activities, was administrated 2 weeks after test 1 to measure if information rehearsal contributes to the delayed-effect of previewing and background knowledge.

**Table 3.1 Research Design**

	<b>Experimental Group A</b>	<b>Experimental Group B</b>	<b>Control Group C</b>
Prereading Activities	Preview	Background Knowledge	No Activities
Reading	Text 1	Text 1	Text 1
Comprehension Measurement	Test 1	Test 1	Test 1
Two Weeks Gap			
Reading	Text 2	Text 2	Text 2
Comprehension Measurement	Test 2	Test 2	Test 2

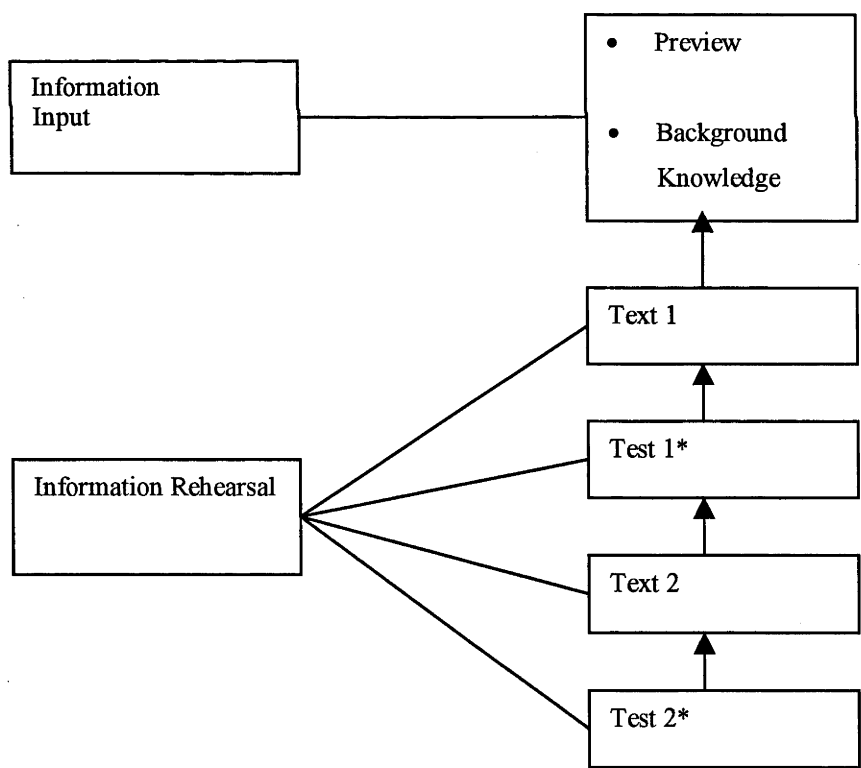
Notes: The time gap between test 1 and test 2 was two weeks. Group A and Group B were two experimental groups. Group C was the control group

Within the research design, the flow chart in Figure 3.1 represents the ways in which four information rehearsal processes are hypothesized to operate. The four

information rehearsal processes (the first text, first test, second text, and second test) provide access routes to the information input (preview and background knowledge).

Firstly, the process of reading the first text and doing the first test (see Fig. 3.1) induces an active elaboration of information input (preview and background knowledge), thus not only increasing comprehensibility of information input but also allowing information input to enter the knowledge store for the delayed second test administered 14 days later. The information rehearsal achieved in reading the first text and doing the first test serves to keep information input accessible for the delayed second text and the second test.

**Figure 3.1 Four Information Rehearsal Processes Provide Access Routes to Information Input**



Notes: \*: The 2<sup>nd</sup> test has two functions, (1) the process of the 2<sup>nd</sup> test itself serves as information rehearsal (2) the scores of the second test serve to quantify performance, as do those of the first test.

Secondly, the process of reading the second text and doing the second test (see Fig. 3.1) serves as a further active elaboration of information input. When the subjects in the two experimental groups processed the second reading, they had through the prereading treatments the advantage of increased information input in memory over the control group. This advantage allowed for an interaction between information input stored in memory and the information in the text. This interaction facilitated and enhanced the subjects' comprehension of the second reading. When students finished the second reading, their comprehension of the second text was assessed through multiple choice and true or false questions.

The following three hypotheses and four subhypotheses guided this research.

### 3.2.1 Hypotheses and Subhypotheses

#### Hypothesis 1

The two experimental groups (Preview Group, Background Knowledge Group) will perform significantly better than the control group in the first comprehension test due to the immediate schema-enriching effects of the prereading activities of preview and background knowledge.

#### Subhypothesis 1.1

Group A (Preview Group) will perform significantly better than Group C (Control Group) in the first comprehension test due to the immediate schema-enriching effects of preview.

### Subhypothesis 1.2

Group B (Background Knowledge Group) will perform significantly better than Group C (Control Group) in the first comprehension test due to the immediate schema-enriching effects of background knowledge.

## Hypothesis 2

The two experimental groups will perform significantly better than the control group in the second comprehension test due to the enriching effects of information rehearsal on the prereading activities of preview and background knowledge.

### Subhypothesis 2.1

Group A (Preview Group) will perform significantly better than Group C (Control Group) in the second comprehension test due to the enriching effects of information rehearsal on preview.

### Subhypothesis 2.2

Group B (Background Knowledge Group) will perform significantly better than Group C (Control Group) in the second comprehension test due to the enriching effects of information rehearsal on background knowledge.

### Hypothesis 3

The three groups (A, B & C) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

#### Subhypothesis 3.1

Group A (Preview Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

#### Subhypothesis 3.2

Group B (Background Knowledge Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

#### Subhypothesis 3.3

Group C (Control Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

### 3.3 Instrument

#### 3.3.1 Reading Selections

The two selected texts, which were written by American author Leo Huberman, were taken from his book *We, the People*, a collection of historical stories on immigration to America. The book was published in 1947. The two chosen texts "Here They Come" in fact are two parts of one and the same article with the same title (see Appendix B). The article describes the difficulties and dangers of the early immigration of people to America.

As in the research of Chen and Graves (1995), care was taken to select texts on a topic unfamiliar to most Chinese students, and one which presupposes culture-specific information that most Chinese students lack, even during the minimal "training" they received as part of the study.

The selection "Here They Come" in my study is of a different genre from that in Chen and Graves' (1995). Chen and Graves used a story by O. Henry, who was famous for inventing complicated story plots which built up to sharp, unexpected endings. The selections used in my study are from an article taken from a collection of historical accounts of immigration to America, which is documentary narrative.

According to Heaton (1988), the equivalence of the two texts at the same level of difficulty is one of the basic requisite principles that two tests need to have in order to possess reliability. In this study, the first text in the first test was approximately 1100 words in length, and the second text in the second test was approximately 1300 words.

In order to ensure that the increased 200 words in the second text would not contribute to increased difficulty in reading comprehension. I followed the idea of Krashen (1981: 23) that the way to minimize reading difficulties is to confine to a single topic or to the text of a single author. The advantage of reading on the same topic and by a single author is that when students are required to read the second text, to some extent, they actually review repeated words of the first text and the particular style of a single author. From this point of view, the increased 200 words in the second text will not make much difference to the difficulty of the text.

The reason for choosing two texts on the same topic was that content-continuous texts can, in themselves, build readers' knowledge base (Krashen 1981:23). As Carrell and Eisterhold (1983: 556) conclude repeatedly accessed schemata result in increased comprehension.

### *3.3.2 Two Prereading Treatments*

Preview and Background Knowledge were the introductory materials presented to readers before reading. Preview focused on providing general information about the content of the upcoming text while Background Knowledge focused on providing detailed information about the content of the upcoming text. In the following section, I give a brief description of construction of Preview and Background Knowledge and compare the differences and similarities of construction of Preview and Background Knowledge in Chen and Graves (1995) and in my study.

### 3.3.2.1 The Preview Treatment

Over 18 years ago, Graves, Cooke and Laberge (1983) pioneered the designing of short story previews (usually considered as 'Graves' Preview'). The purpose of their design was to present relevant background knowledge and to introduce specific key story elements. Graves' Preview consists of three key components:

1. The teacher gives the students a framework for understanding upcoming texts.
2. The students engage in a brief discussion of the topic of each upcoming text.
3. The teacher gives the students both specific information and general information about the content of upcoming texts, including "key elements of plot, characters, point of view, tone, setting, and perhaps theme," as well as "definitions of difficult vocabulary, explanations of potentially difficult concepts." (Graves et al., 1983: 264)

Over 10 years later, the effects of previewing an American short story were further investigated by Chen and Graves (1995). In their study, they constructed the Preview (1995: 668) following the guidelines provided by Graves, Cooke and Laberge (1983) and consisting of five key components:

1. Start with a statement to catch students' interest by making a connection between a familiar topic of the story.
2. Introduce the information related to the story.
3. Introduce the characters in the story.
4. Give a brief description of the story and the plot up to the climax of the story.



5. Ask directional questions for guiding the reading and giving directions for the students to read the story.

In their 1995 study, Chen and Graves omitted the explanation of difficult phrases and concepts such as culture-specific words which had been part of the third component in Graves' Preview (1983), the reason being that they intended to provide a stronger comparison of Preview with general information and Background Knowledge with specific information.

In constructing the Preview for my own study, I followed Chen and Graves (1995) in the sense that the explanation of cultural specific words and difficult phrases was reserved for the other prereading activity, that is Background Knowledge, in order to achieve a stronger comparison between the effectiveness of the two different treatments. Thus, the Preview treatment consisted of three key components (Refer to Appendix A for specific information).

1. An interest-building part designed to motivate students by making a connection between a familiar topic "the discovery of America" and the topic of the story of immigration during the 18th century.
2. A topic question to provide students with the opportunity to activate what they knew about the early immigrants' journey in the 18th century. This was intended to help students to activate relevant historical knowledge of which they might have been unaware and relate it to the target text.
3. A brief description of the story with purpose-setting questions to help students comprehend the text and avoid undue difficulty when they read.

### 3.3.2.2 The Background Knowledge Treatment

Chen and Graves (1995: 669) operationalised their theoretical construction of background knowledge, which focuses on specific information related to the target text, by explaining culture-specific phrases and concept words. The provision of background knowledge consisted a written prereading with three parts:

1. A statement to catch students' interest followed by provision of detailed information such as the title of the story, the author, and the year of publication.
2. A paragraph about culture-specific information which is necessary to understanding the story.
3. A paragraph explaining the difficult phrases and culture specific phrases in the story.

In constructing the background knowledge for my own study, I adapted Chen and Graves' construction of background knowledge in two respects. First, I omitted to provide the title of the story since in the comprehension question, I included a true or false question to examine if students could catch the global meaning of the text by asking them to judge if the suggestive title "Here They Come" expressed the main idea of the text. Second, since the target text which I selected introduced a wide geographic area and some important harbors in west Europe unfamiliar to most Chinese students, a map of the world was provided in the background knowledge passage. Therefore, the expository passage of background knowledge for my own study consisted of three key components (Refer to Appendix A for specific information):

1. Part one was designed to motivate students' interest and build up their background knowledge by locating some of the most important harbors in west Europe and America on a map of world so as to provide students with an opportunity to appreciate the distance of early immigrants' voyage to America and to develop initial associations about the difficulties of early immigrants.
2. In the second part, ten words and phrases from the text were classified into three groups to construct background knowledge: (a) key concept expressions, (b) difficult words and phrases, (c) geographic words.
3. Part three was designed to encourage students to evaluate the usefulness of their own ideas by providing suggestive answers to the three groups of words discussed above.

### *3.3.3 Testing*

#### 3.3.3.1 The Construction of Comprehension Questions

Heaton (1988), Hughes (1989) state that a test is considered valid if it measures what it is supposed to measure. According to them, a multiple-choice grammar test is a valid test to measure students' grammatical knowledge, but is an invalid one to measure students' speaking abilities.

The purpose of this study is to investigate first the value of prereading as an aid in building schemata to improve EFL reading comprehension, and second the delayed-effect of the prereading activities on EFL comprehension. Bearing this purpose in mind,

I avoided questions for which answers were directly stated in the text when I constructed multiple-choice questions and true or false questions. The reading comprehension questions were intended to encourage students to make inferences both from the text and from their background knowledge relating to the text. Therefore, I distinguished between 2 types of reading comprehension questions: textually inferred (bottom-up) and interactively-inferred. Textually inferred questions require answers that can be inferred from the text only; interactively inferred questions require answers that can be inferred from an interaction between the text and previously acquired knowledge.

For the first reading comprehension test, the previously acquired knowledge refers to the background knowledge acquired through prereading activities. For the second reading comprehension test, the previously acquired knowledge refers to both the background knowledge through prereading activities and the first reading and comprehension test.

Examples below illustrate the types of questions (see Appendix B for the complete set): Textually Inferred Questions (Example 1); Interactively Inferred Questions (Example 2).

#### Example 1: Text Excerpt (Textually Inferred Questions)

First came the Norsemen; then an Italian sailor on behalf of Spain; then another Italian sailor on behalf of England; then Spaniards, Portuguese, English, French; then an English sailor for Holland. All of them discovered parts of America, then raised

their country's flag and claimed the land. They returned home and told stories (some of them true) of what they had seen. People listened, and believed and came.

(T/F) Question

Many people came to America because they had heard the stories from those that had been there and returned. (T/F)

In judging whether this statement is true or false, it is not difficult for a reader to use the text clues to make the inference that people who first came to America were Norsemen, Italian sailors and English sailors. They explored America and made their countries' claim to parts of America. They returned home and told stories about America that made the people in Europe desire to go to America.

Example 2: Text Excerpt (for Interactively Inferred Questions)

Both in Rotterdam and Amsterdam the people are packed densely, like herring, in the large sea vessels. When the ships have for the last time weighed their anchor at Cowes, the real misery begins, unless the ships have good winds, they must often sail 8, 9, 10 or 12 weeks before they reach Philadelphia.

(MC) Question

Which of the following countries did the sailing vessels for the last time depart from?

- a. Spain
- b. England
- c. Germany
- d. The Netherlands

To choose a correct answer from three distracters, a reader needs to activate his/her schema knowledge provided through the background knowledge treatment to make the inference, since no information is available in the text itself (see text excerpt) that Cowes is in England. When the students who received the treatment of background knowledge read the sentence, "*both in Rotterdam and Amsterdam the people are packed densely, like herring, in the large sea vessels,*" (see Appendix B) they are hypothesised to activate their visual memory of the pictorial location of Rotterdam and Amsterdam on the map of the world in their schema and the definitions of individual geographical word meanings (e.g. Cowes, Rotterdam and Amsterdam). Therefore, the information in the text is hypothesised to interact with visual memory of the pictorial locations on the map and to be associated with the verbal meaning input of Cowes, Rotterdam and Amsterdam to provide students in group B (the background knowledge group) a basis for making "a default inference" (see schema theory in Chapter One p. 15) and that namely Cowes is in England and is therefore most likely the correct answer.

#### 3.3.3.2 The Reliability of the Test Results in the Two Tests

According to Heaton (1988), the consistency of test results when a test is administered repeatedly is one of two basic requisite principles that two tests need to have in order to possess reliability.

Ten questions in the form of multiple choice questions and true or false questions were developed as the measurement criteria for each text. Each set of *ten* questions in the two tests was divided into *six* textually inferred questions and *four* interactively inferred questions. This means that the scores from the first comprehension test are equivalent to the scores on the second comprehension test since there is internal consistency in both tests. This is in accord with Henning's (1987) comment that Reliability of a language test refers to its consistency in measuring specified language behaviors.

### 3.3.3.3 The Construction of Reading Comprehension Questions

#### 3.3.3.3.1 Advantages and Disadvantages of Multiple Choice and True or False Questions

Multiple choice and true or false questions share advantages in being easy to respond to, simple to score and in minimizing any negative influence of writing proficiency for EFL students. However, the main disadvantages of multiple-choices and true or false questions is that they are difficult to formulate. Multiple choice questions require carefully written alternatives so that the correct response is clearly correct while the distracters sound plausible. Because of the issues related to measurement in reading comprehension with EFL students, it is necessary to set standards for constructing multiple choice and true or false questions to make them valid. Here the validity refers

to construction validity which means test items should reflect the objectives of background knowledge and preview affecting reading comprehension.

#### 3.3.3.3.2 Standards for Constructing Multiple Choice and True or False Questions

The present study considers construct validity as the most important element to focus on. Therefore, the guiding principles for constructing multiple choice questions in my study have been that 1) the multiple choice question itself should be in a simple, understandable language. 2) distracters need to be plausible to reduce guessing 3) There is need to avoid overlap of response alternatives in order to decrease discrimination between students who know the material and those who don't. With true or false statements, it is necessary to avoid using undue influence of difficult sentences and words in assessing students' reading comprehension. Therefore, in constructing the T/F questions for this study, care has been taken to try to avoid e.g. double negatives and difficult words.

### 3.4 Data Collection

#### 3.4.1 *Selection of Participants*

For this study 78 students were randomly selected from three intact classes of second year non-English majors attending the Agriculture College of Yangzhou University. In order to minimize the priority of background knowledge of majors, care was taken to make sure that the subjects would not be selected from history or geography majors. The English level of selected students is at Band 3 in terms of the National English Proficiency Unified Examination for College non-English majors



Syllabus (1991). According to the College English Syllabus (1991), Band 3 of students is typically equivalent to what is indicated by scores of 450 to 500 on the TOEFL. The specific requirements of Band 3 are as follows: reading speed must be no less than 40 wpm. For less difficult texts, with new vocabulary not exceeding 2% of the total number of words, the reading speed should be 80 wpm with 70% accuracy in comprehension. The listening test requires 60 wpm with 90 wpm with 70% accuracy in comprehension. As for writing, the students, provided with some guidance, should be able to complete in 30 minutes a short composition of 80-90 words on a given topic. And in speaking, the learners are required to carry on daily conversations in simple English and to ask and answer questions based on a given text. All student participants have passed Band 3 mimic.

#### *3.4.2 Procedures of Data Collection*

One week before conducting the pilot test, English teachers in the Agriculture College were contacted by e-mail to verify that the multiple-choice questions and true or false questions for both tests were at an appropriate level of English for the pilot students.

Then, the two texts were pilot tested with a group of ten students from the Agriculture College who are studying at the Band 3 level to ensure first that the two texts were suitable for the subjects' level and second that the time allowed was sufficient for subjects to complete the tests. No pilot test was conducted for the prereading activities because subjects targeted all came from the same college as the pilot students. It would therefore have been possible for the pilot students to discuss the topic and prereading activities with the targeted subjects of the two experimental groups

before these actually took part in the test. After the pilot test, some of the questions <sup>for example, there were some faults in overlapping of response alternatives and</sup> were revised, <sup>Also</sup> and the time allowed was adjusted to <sup>give</sup> allow sufficient time for the subjects <sup>about</sup> to complete the reading comprehension.

three distracters failed to reduce guessing.

Two days prior to conducting the testing session one, all the second year students in the agriculture college were asked to attend a meeting about the research. The objectives of the meeting were:

1. To establish a cooperative relationship between the subjects and the teachers before the test;
2. To make subjects comfortable and at ease with the upcoming procedure;
3. To give subjects the opportunity to ask any questions regarding the research, its importance and implications for EFL teaching in China;
4. To inform students that the scores of the test would not be recorded and at the same time ask them to do their best.

On the day of the first test session, the three groups (A, B & C) of subjects were randomly assigned to three different rooms. Next, each group was randomly assigned to three different conditions.

In the Preview condition, according to the directions for administering the previewing in the preview material, the English teacher first gave students introductory information about the upcoming test by posing purpose-setting questions and then guiding students in a discussion.

In the Background Knowledge condition, the English teacher first drew a map of the world on the blackboard and located the Netherlands, England and France for students and pointed out the important harbors of these countries finally give students opportunity to write down what they know about four key concept expressions, three difficult phrases and three geographic words which are important to understand the text.

In the control condition, there was no prereading treatment before the first reading comprehension test.

After teachers in the two experimental groups (A & B) finished carrying out the prereading activities, all the prereading materials were collected. Since the purpose of this study was to test the effect of prereading activities, it was necessary that prereading materials not be available for the subjects in the two experimental groups to refer to when they answered the comprehension questions in the first test.

The second test was administered 2 weeks after the first test in which none of the groups (A, B & C) had prereading activities.

### **3.5 Data Analysis**

#### ***3.5.1 Scoring***

Answers to the multiple-choices questions and true or false questions in the first test and the second test were scored as correct or incorrect. The maximum score for multiple-choice was 5 points (5x1), and the maximum score for true or false was 5

points (5x1). Therefore, in each test, the total score for multiple-choice and true or false questions was 10 points (10x1).

### *3.5.2 Choosing Statistics*

I chose Kruskal-Wallis to test hypothesis 1 (subhypothesis 1.1, subhypothesis 1.2) and hypothesis 2 (subhypothesis 2.1, subhypothesis 2.2) . My reasons for choosing this statistical procedure were: 1) the data are independent because they were collected from three separate groups, 2) I am not confident that the data are parametric since the scores taken from multiple choice questions and true or false questions can not be measured using interval scale due to the possibly varying degrees of difficulties among the items. In such cases, a nonparametric comparison of the data seems more appropriate than does ANOVA which was used in Chen and Graves 1995. Therefore, in my study, I used nonparametric statistics (Kruskal-Wallis Test) to test differences and compare the means of three independent groups.

I used Wilcoxon Matched-Pairs Signed Ranks to test hypothesis 3 (subhypothesis 3.1, subhypothesis 3.2, subhypothesis 3.3) relating to the degree of change in scores in the first and second tests. The reasons for choosing Wilcoxon's Matched-Pairs Signed Ranks Test were 1) I am not confident that the data are interval scale, since the multiple-choice questions and true or false questions are not interval measurement. 2) I am interested in the degree of change in students' scores in the first and second tests, and, Wilcoxon's T is a more powerful nonparametric procedure for showing the differences and comparing means and the rank sums of each group. Data were analyzed using the SPSS package of statistical procedures. The level of statistical significance was set at  $p \leq .05$ .

# 4

## RESULTS AND INTERPRETATION

### 4.1 Introduction

In this chapter, I first present the results of the statistical analyses of the three hypotheses and four subhypotheses. I then interpret the results focusing on the possible reasons why students' performance in the two experimental groups was significantly better than that of the students in the control group, and why students' performance in all three groups in the second test was better than in the first test.

### 4.2 Results

#### *4.2.1 Research Hypothesis 1*

The two experimental groups (Preview Group, Background knowledge Group) will perform significantly better than the control group in the first comprehension test due to the immediate schema-enriching effects of the prereading activities of preview and background knowledge.

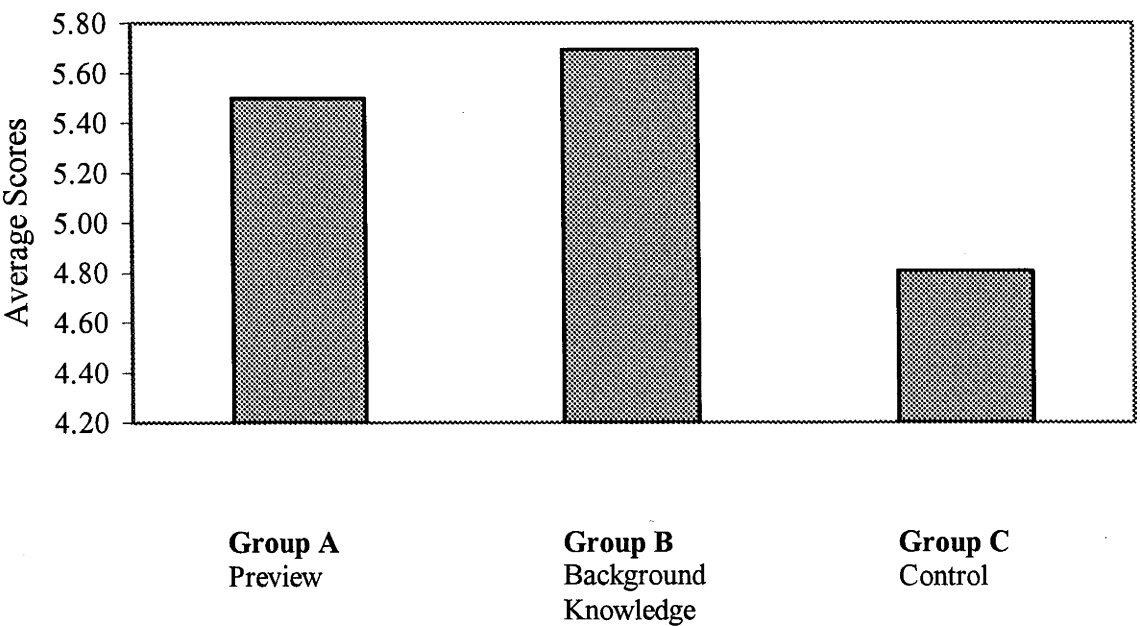
Subhypothesis 1.1

Group A (Preview Group) will perform significantly better than Group C (Control Group) in the first comprehension test due to the immediate schema-enriching effects of preview.

Subhypothesis 1.2

Group B (Background Knowledge Group) will perform significantly better than the Group C (Control Group) in the first comprehension test due to the immediate schema-enriching effects of background knowledge.

**Figure 4.1 Average Scores of the Three Groups (A, B & C) in Test 1**



Analysis of data relevant to research hypothesis 1 is presented in Figure 4.1 and tables 4.1 and 4.2 . Figure 4.1 shows higher average scores of the two experimental groups (A&B) over the control group (C) and a lower average scores for Group A over Group B.

The Kruskal-Wallis Test was used to test hypothesis 1 (Subhypotheses 1.1 and 1.2) to determine whether there were significant differences among the three groups. The Kruskal-Wallis Test showed that there were significant differences among the three groups, as  $H=8.043$ ,  $P=0.018$  (significant),  $df=2$ ,  $P\leq 0.05$ , the observed value 8.043 is greater than the critical value 5.991.

**Table 4.1: The Mean Ranks of the Three Groups (A, B & C) in Test 1**

Groups	Number of Subjects	Mean Rank
Group A (Preview)	26	42.46
Group B (Background Knowledge)	26	46.27
Group C (Control)	26	29.77
Total	78	

The post hoc test *Ryan Procedure* was used as a follow-up to ascertain whether the two experimental groups (A&B) were significantly better than the control group (C).

Table 4.2 shows that a comparison of Group A and Group C indicates a small advantage for Group A over Group C; the difference however, is not statistically

significant as the Z value (1.990) is smaller than the critical value (2.13) . Therefore, subhypothesis 1.1 is rejected.

**Table 4.2: Ryan Procedure: Comparison of Critical Values and Z Values of the Three Groups in Test 1**

Groups	Group B	Group C
Group A	c.v.=2.13 Z= 0.538	c.v.=2.13 Z=1.990
Group B		c.v.=2.40 Z= 2.805*

Note: c.v. = critical value            \*= significant

Table 4.2 however, shows a significant difference between Group B and Group C as the Z value (2.805) is larger than the critical value (2.40). Therefore, subhypothesis 1.2 is supported.

Overall, the data in Table 4.1 and 4.2 show a statistically significant superior performance by the background knowledge group over the control group, while there was no statistically significant difference in subjects' performance between the preview group and the control group, although the preview group was still ahead of the control group (see Fig. 4.1). Therefore, hypothesis 1 is only partially supported.

*4.2.2 Research Hypothesis 2*



The two experimental groups will perform significantly better than the control group in the second comprehension test due to the enriching effects of information rehearsal on prereading activities of preview and background knowledge.

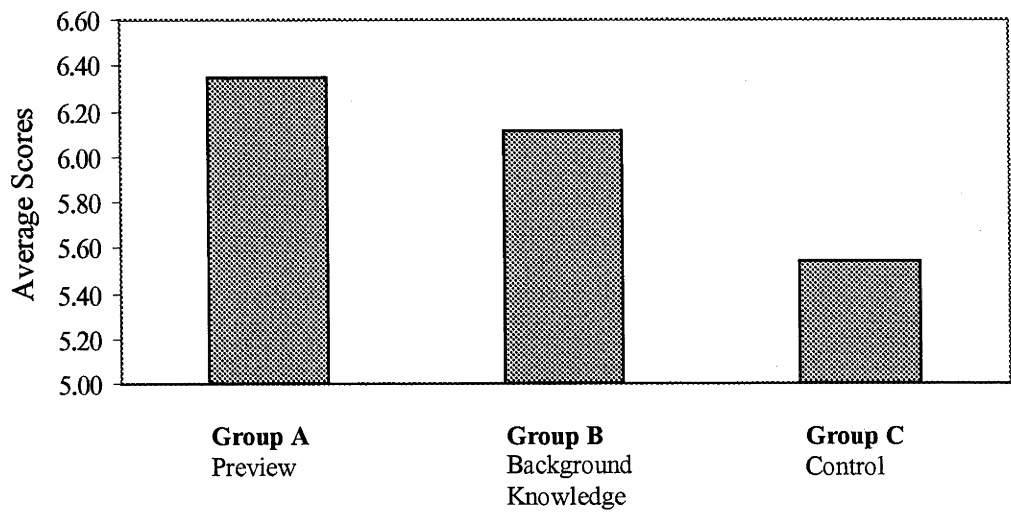
Subhypothesis 2.1

Group A (Preview Group) will perform significantly better than Group C (Control Group) in the second comprehension test due to the enriching effects of information rehearsal on preview.

Subhypothesis 2.2

Group B (Background Knowledge Group) will perform significantly better than Group C (Control Group) in the second comprehension test due to the enriching effects of information rehearsal on background knowledge.

**Figure 4.2 Average Scores of the Three Groups (A, B & C) in Test 2**



Analysis of data relevant to research hypothesis 2 is presented in Figure 4.2 and the tables 4.3 and 4.4.

Figure 4.2 shows higher average scores for the two experimental groups (A&B) over the control group (C) and lower average scores for Group A over Group B.

The Kruskal-Wallis Test was used to test hypothesis 2 (Subhypotheses 2.1 and 2.2) to determine whether there were statistically significant differences among the three groups. The Kruskal-Wallis Test showed that there were statistically significant differences among the three groups as  $H=8.946$ ,  $P=0.011$ ,  $df=2$ ,  $p\leq 0.05$ , the observed value 8.946 is greater than the critical value 5.991.

**Table 4.3: The Mean Ranks of the Three Groups (A, B & C) in Test 2**

Groups	Number of Subjects	Mean Rank
Group A (Preview)	26	45.92
Group B (Background Knowledge)	26	43.33
Group C (Control)	26	29.25
Total	78	

The post hoc test *Ryan Procedure* was then used as a follow-up to find whether the two experimental groups (A&B) were significantly different from the control group (C).

**Table 4.4: Ryan Procedure: Comparison of Critical Values and Z Values of  
the Three Groups in Test 2**

<b>Groups</b>	<b>Group B</b>	<b>Group C</b>
<b>Group A</b>	c.v.=2.14  Z= 0.630	c.v.=2.40  Z=2.582*
<b>Group B</b>		c.v.=2.14  Z= 2.574*

Note: c.v. = critical value            \*= significant

Table 4.4 shows a significant difference between Group A (Preview) and Group C (Control group) as Z value (2.582) is larger than the critical value (2.40). Therefore, subhypothesis 2.1 is supported. The difference between Group B and Group C is also significant as Z value (2.574) is larger than the critical value (2.14). Therefore, subhypothesis 2.2 is also supported.

Overall, the data of tables 4.3 and 4.4 show a statistically significant superior performance by the background knowledge group and preview group over the control group with greater significance for the preview group than the background knowledge group. Therefore, hypothesis 2 is supported.

#### *4.2.3 Research Hypothesis 3*

The three groups (A, B & C) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

The Wilcoxon Signed Ranks Test was used to test hypothesis 3 to see if there was any change in the performance of the same three groups between the two tests.

In order to address research hypothesis 3, the Wilcoxon Signed Ranks Test was used three times respectively to see if there were statistically significant differences among the results of the two tests for groups A, B and C.

### Subhypothesis 3.1

Group A (Preview Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

**Table 4.5: Comparison of the Students’ Performance in Group A ( Preview) in Test 1 and Test 2**

Ranks of Test 1 & Test 2	Number of Subjects	Mean Rank	Sum of Ranks
Negative Ranks	3 <sup>a</sup>	7.50	22.50
Positive Ranks	18 <sup>b</sup>	11.58	208.50
Ties	5 <sup>c</sup>		
Total	26		

Note: a: Test 2 < Test 1                      b: Test 2 > Test 1                      c: Test 1 = Test 2

**Figure 4.3 Average Scores of Group A  
(Preview) in Test 1 and Test 2**

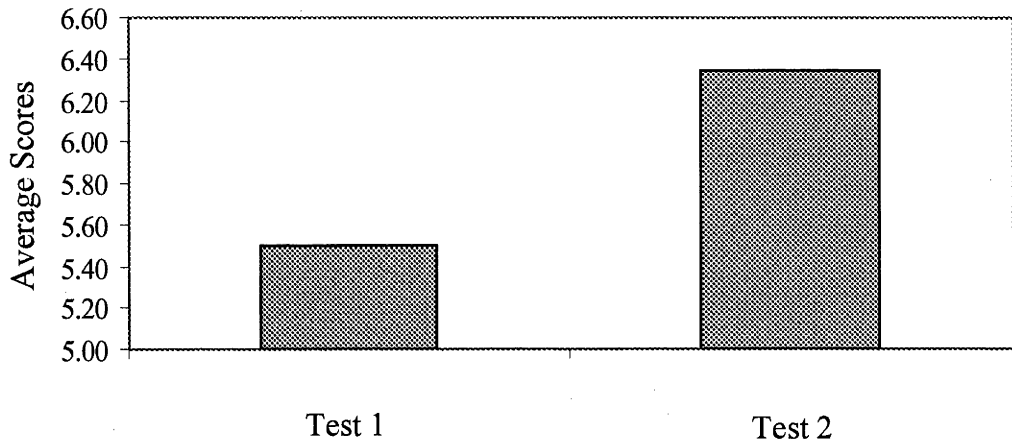


Table 4.5 shows that 18 students had better performance in the 2<sup>nd</sup> test, 3 students' performances were worse than in the 1<sup>st</sup> test, and 5 students' scores were the same in both tests.

The data of table 4.5, and figure 4.3 were subjected to analysis to see if there was any change in performance of Group A between the two tests. The Wilcoxon Signed Ranks Test showed that there was a statistically significant difference between the results of Group A in the two tests as  $Z = 3.365$ ,  $P = 0.001$  (significant),  $N = 26$ ,  $P \leq 0.05$ , the observed  $Z$  value is larger than the critical value. Therefore, the subhypothesis 3.1 is supported.

Subhypothesis 3.2

Group B (Background Knowledge Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

**Table 4.6: Comparison of the Students’ Performance in Group B (Background Knowledge) in Test 1 and Test 2**

Ranks of Test 1 & Test 2	Number of Subjects	Mean Rank	Sum of Ranks
Negative Ranks	5 <sup>a</sup>	10.00	50.00
Positive Ranks	15 <sup>b</sup>	10.67	160.00
Ties	6 <sup>c</sup>		
Total	26		

Note: a: Test 2 < Test 1                      b: Test 2 > Test 1                      c: Test 1 = Test 2

**Figure 4.4 Average Scores of Group B (Background Knowledge) in Test 1 and Test 2**

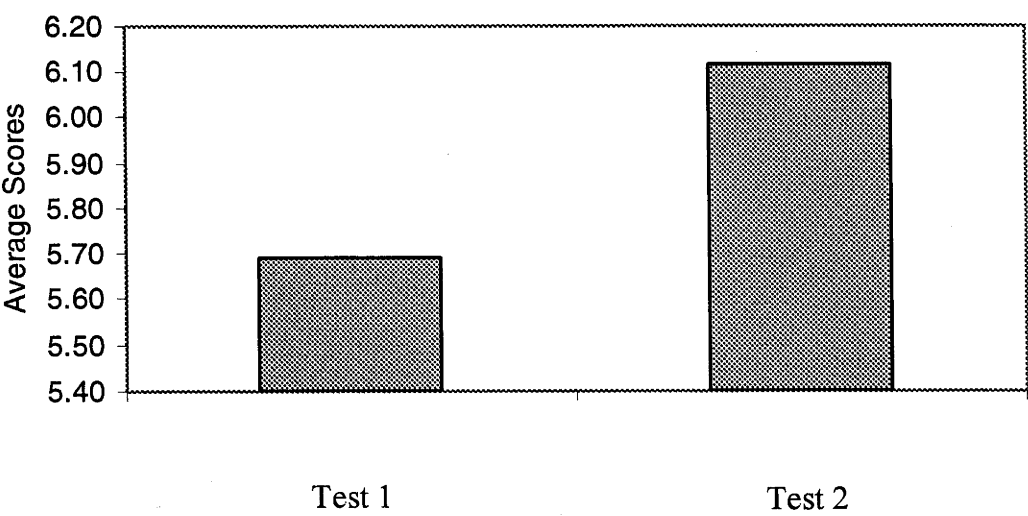


Table 4.6 shows that 15 students had better performances in the 2nd test, 5 students' performances are worse than in the 1st test, and 6 students' scores are the same in both tests.

The data of Table 4.6, and Figure 4.4 were subjected to analysis to see if there was any change in performance of group B between the two tests.

The Wilcoxon Signed Ranks Test showed that there was a significant difference between the results of Group B in the two tests as  $Z = 2.294$ ,  $P = 0.022$  (significant),  $N = 26$ ,  $P \leq 0.05$ , the observed  $Z$  value is larger than the critical value. Therefore, the subhypothesis 3.2 is supported.

### Subhypothesis 3.3

Group C (Control Group) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test.

Table 4.7 shows that 14 students had better performances in the second test, 4 students' performances were worse than in the first test, and 8 students' scores were the same in both tests.

**Table 4.7: Comparison of the Students' Performance in Group C in Test 1 and Test 2**

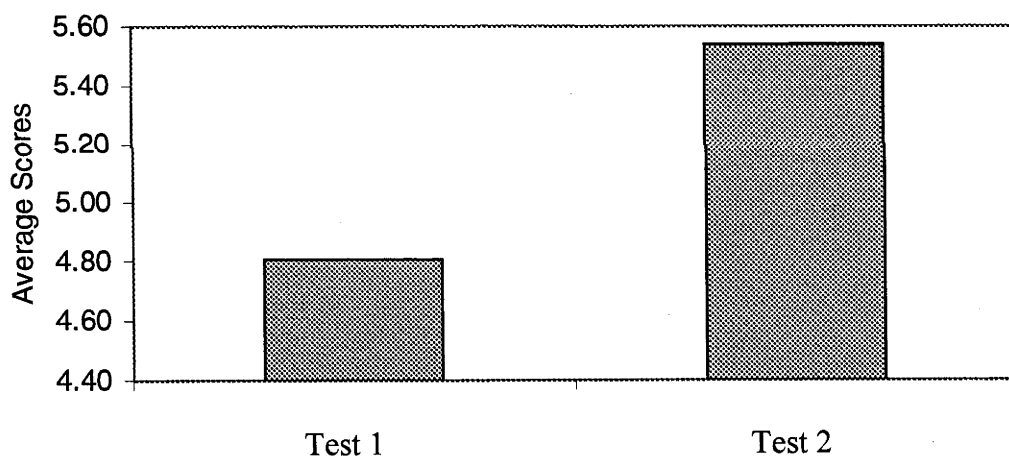
<b>Ranks of Test 1 &amp; Test 2</b>	<b>Number of Subjects</b>	<b>Mean Rank</b>	<b>Sum of Ranks</b>
<b>Negative Ranks</b>	4 <sup>a</sup>	6.00	24.00
<b>Positive Ranks</b>	14 <sup>b</sup>	10.50	147.00
<b>Ties</b>	8 <sup>c</sup>		
<b>Total</b>	26		

Note: a: Test 2 < Test 1

b: Test 2 > Test 1

c: Test 1 = Test 2

**Figure 4.5 Average Scores of Group C (Control) in Test 1 and Test 2**



The data of Table 4.7, and Figure 4.5 were subjected to analysis to see if there was any change in performance of group C between the two tests.

The Wilcoxon Signed Ranks Test showed that there was a significant difference between the results of group C in the two tests as  $Z = 2.758$ ,  $p = 0.006$  (significant),  $N$



=26,  $P \leq 0.05$ , the observed Z value is larger than the critical value. Therefore, subhypothesis 3.3 is supported.

The Wilcoxon Signed Ranks Test showed that there was a significant difference between the results of the three groups (A,B&C) in the two tests. Nevertheless, overall, figures 4.3, 4.4 and 4.5, and tables 4.5, 4.6 and 4.7 show that the performance of the three groups (A,B&C) in the second test were better than in the first test. Therefore, hypothesis 3 that the three groups (A,B&C) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test is supported.

### **4.3 Discussion**

This section considers my study's findings in relation to the three hypotheses. Particular attention is given to accounting for why a superiority of previewing over background knowledge is found in my study, which is opposite to the finding of Chen and Graves (1995) and also to most of other research as discussed in Chapter Two. Attention is also given to how the four information rehearsals contribute to the delayed efficacy of previewing and background knowledge. There is further specific focus on functions of schemata in retrieval of information and in their providing default values.

#### *4.3.1 Interpreting the Results of Hypothesis 1*

In contrast to the findings of Chen and Grave (1995), who found that the preview group but not the background knowledge group had a significantly superior performance over the control group, the results in this study show that the background

knowledge group had a significantly superior performance over the control group but not the preview group.

Several explanations could account for this unexpected result:

1. First, the background knowledge treatment provided the students with a map of the world which gave them a geographic visual display of the distance traveled to America by the early immigrants, and helped them to develop an initial association with the difficulties of the early immigrants, which was the key to understanding the upcoming text. Kolers (1973) has proposed that pictures are better than words at depicting spatial configurations. Graphs, maps, diagrams and flow charts are often particularly effective in conveying the spatial and temporal relationships among concepts. Schnotz (1993) points out that pictures both as analog representations and mental models use analogies for representing information, which means that picture comprehension is a process of establishing an analogy between the picture and the corresponding mental model.

2. Second, the background knowledge treatment focused students' attention on detailed information which is the key to understanding the upcoming text (see Appendix A). However, giving students a global idea to understand the upcoming text was also covered in the preview treatment through the preliminary outline. It could be that in my study, providing more detailed information relevant to test item demands for comprehension favored the background knowledge group (See Appendix A).

3. Third, the superiority of background knowledge treatment can be explained on the basis of research on explicit and direct instruction (cf. Rosenshine & Stevens

1986; Long 1991). Although this body of research does not directly address the issue of prereading activities, it does suggest that direct help and explicit explanations by teachers result in improved comprehension and recall (see also Duffy et al., 1987).

Interesting was the fact that significantly superior performance was achieved when the definition of geographic words such as 'important harbors' and the maps were presented together in the background knowledge treatment. It is possible that the reciprocal relationship between print and pictorial components through highlighting important harbors on the map of the world and providing the definitions of the important harbors in the background knowledge treatment facilitated students' understanding of the location of the important harbors which is actually impossible to state clearly in a verbal definition. This finding does support Read and Barnsley's conclusion (1977) that a person's processing and storage of early reading materials is dependent on and affected by the interaction of both verbal and pictorial components. My finding also supports the arguments by Mayer and Sims (1994) that the contiguous presentation of visual and verbal material made it more likely for the learners to build referential connections between the visual representation and the verbal representation in short-term memory which resulted in better performance.

Last but not least, it could be argued that the preview used in this study was not an optimal one for facilitating students' comprehension. In relation to the contrary findings of Chen and Graves (1995), what can we conclude from this result? Which prereading activity is best for maximizing students' comprehension of a text? A well-known Chinese saying is "we need to get beyond the horse-race mentality" Thus, the question is not which activity is better, but which activity is most suitable for which type of reading. In Chen and Graves (1995) study, the reading passage used by them is

the story of O. Henry. O. Henry was famous for inventing plots that build up to sharp, unexpected endings. Therefore, in this case, the preview treatment proved to be more effective due to its role in providing a description of the characters, which made it easier for students to follow the plot and organize information into a coherent mental structure. In my study, the text is documentary narrative and has no clear plot. For this type of text, understanding some key words, concept words and geographic words is more important to gain an understanding of the text. Therefore, the background knowledge, which was constructed in my study to focus on explaining concrete information and visual representations of geographic places, proved to be more effective in facilitating students' understanding of the upcoming text.

#### *4.3.2 Interpreting the Results of Hypothesis 2*

In this study, hypothesis 2, that the two experimental groups will perform significantly better than the control group in the second comprehension test due to the enriching effects of information rehearsal on the prereading activities of preview and background knowledge, has been supported. The results show a statistically significant superior performance by both the preview and the background knowledge group over the control group.

The superior performance of the two experimental groups in the second test over the control group supports the hypothesis that it was the four information rehearsal processes (That is reading the first and second texts, doing the first and second tests) which qualitatively and quantitatively enriched the information input (preview and background knowledge) (see Fig. 3.1 in Chapter Three) and, in turn, aided subjects in the two experimental groups to attain better performances in the delayed test than the

control group which had the benefit of information input only from reading the first text and doing the first test. Therefore, the deeper and more meaningful the four information rehearsals are processed, the more effectively information acquired from the two prereading activities can be retained and retrieved.

It is possible that without the reactivation and four information rehearsals, the information input could not have been maintained in accessible storage for over 2 weeks to contribute to a better performance of the two experimental groups in the delayed second test. Craik and Lockhart (1972) have argued that information can be processed at different levels, and that the deeper the level of processing, the more likely it is that the information will be retained in long-term memory. Bransford (1979: 65) has explained Craik and Lockhart's ideas of "levels of processing" in some detail. Bransford points out that inputs processed at deeper, semantic levels of analysis are assumed to result in stronger and more durable memory traces than input processed at shallow or more superficial levels. Bransford (1979) has also suggested that what learners do with newly learned information influences what they remember. It would make sense, therefore, that a process of activating prior knowledge, and integrating prior knowledge with new information would help learners remember newly learned information because such a process provides students with an opportunity for rehearsal and a framework for organizing what they already know and the information they are asked to learn (Bransford 1979: 206). The four processes of information rehearsal were responsible for transferring the information input from short-term memory to long-term memory. The long-term memory was a permanent storage with an unlimited potential for the three groups' better performance in the second reading comprehension test.

Thirdly, the more interesting finding is that as opposed to the first test, in the second test, it was the preview group that was more effective than the background knowledge group although both groups were significantly different from the control group. How then to explain this finding? The function of attention schemata (Chapter One, p.15) provides insight into reasons for this finding. It is possible that the previewing helped students in the preview group (Group A) select important information for further comprehension. Because the preview provided introductory information on the target text, students remember important information key to the target text. Furthermore, previewing may have helped students organize information into a coherent mental structure. This is because the preview itself was purposely constructed to provide highly relevant introductory information in a whole-text framework. This can help students build "internal connections" (Mayer, 1989) between important ideas in the preview and the text. Therefore, it seems that the information in the preview that is more richly connected in the students' brains will be more available and accessible in a delayed test. The background knowledge group would be less likely to promote selection and organization of important text information. The background knowledge group focuses on detailed information and there is little, if any, information and instructions that would help students see the "big picture" of logically related ideas. Bartlett's finding (1932 cited in Rumelhart, 1980: 49) supports my discussion here that we remember the gist of a story rather than the details.

This finding leads me to ask, then: what is the value of background knowledge? My research clearly shows its value for providing concrete information and visual representations of geographic places, particularly when this information is relevant to comprehension questions on text detail. However, the findings from the delayed second test show the limits of background knowledge treatment. It seems that, while

background knowledge may be effective in providing detailed information for students' understanding of test questions, the integrated information provided by preview is likely to be remembered over a longer period of time. This explanation is consistent with the argument (Reder & Anderson 1980) that there is a general tendency that the longer the delay between the information input and the delayed test, the greater the degree of distortion of detailed information (1980:132).

#### *4.3.3 Interpreting Results of the Hypothesis 3*

In this study, hypothesis 3, that the three groups (A, B & C) will perform significantly better in the second comprehension test than in the first comprehension test due to the schema enriching effects of doing the first reading and the first comprehension test, has been supported.

1. A true or false statement taken from the second test serves as an example illustrating the usefulness of schemata in the recalling of information from memory and in providing default values.

The food quality in small sailing vessels was very bad as it was for steerage passengers in large steamships because the food made immigrants ill and there was never enough. (True/False) (see Appendix B)

To give a correct answer, the subject was required to make a default inference, as the required information was not available in the text. So, the subject first needed to recall the information in the first text about the food situation in small sailing vessels in the 18th century. Then he/she would have been able to trace through this schema to gain access to the information relating to the bad food provided in small sailing vessels in the

18th century. Finally, the information that subjects could recall from the first text coupled with the information in the second text about the reason for bad food in the larger steamships helped subjects to choose the correct answer. Thus, I hypothesize that the role of schemata in both the retrieval of information and provision of default values is vital in resolving comprehension problems of inference.

Results of this study are generally consistent with the findings of other studies (Johnson, 1981; Carrell, 1987; Taglieber et al. 1988; Graves & Chen 1995) in that prior knowledge relevant to the target text has a strong facilitative effect on ESL comprehension. The results in my study show that there is a significant difference within the same three groups' performance between the two tests. It is possible that, because control group had read the first text so that when they read the second text they had the necessary background knowledge to process the second text, whereas, the two experimental groups were advantaged by having background knowledge from both the prereading activities and the first reading comprehension. In this case, it appears that the more the students use the acquired schemata and activated schemata, the better they will comprehend the text. Therefore, the repeatedly accessed schemata result in increased comprehension (Carrell & Eisterhold 1983: 556).

2. Secondly, in addition, my data are consistent with the arguments of Carrell & Eisterheld (1983) that readers process the new input through "some existing schema". Subjects already had some schemata on the topic, so they could successfully match the new information with that schema to process the text (1983: 557).



In my study, as a subject proceeds through the second text, he or she meets two kinds of information; old, which refers to the information in the previous text, and new, which is added information in continuation of the second text. When the new information in the second text is integrated with old knowledge in the first text, the subjects' reading comprehension is facilitated.

The first sentence of the beginning of the second text is actually a continuation of the ending of the first text, which is used here to show how old knowledge interacts with new knowledge:

Isn't it amazing that in spite of shipwreck, rotten food, vermin, sickness, people continued to come by the thousands? (see Appendix B, p.104) (Last Sentence in the 1<sup>st</sup> Text)

By 1876 nearly all the immigrants came in large steamships which took only seven or twelve days to cross, instead of the number of weeks in a small sailing vessel, as it was before this time (see Appendix B. p 108) (First Sentence in the 2<sup>nd</sup> Text)

When subjects read this sentence, the initial text relations are established by recognizing that there is semantic and topic continuity of early immigrants between the current text being read and the first text. It is therefore not difficult for the subjects to identify the added information in the second text such as how difficult it was for the immigrants who came in larger steamships to make the voyage to America in the 19th century and the reason why people left Europe in the 19th century. The students could compare the added information in the second text and the previously stored knowledge of how the immigrants came in small sailing vessels and why the immigrants left Europe in the 18th century. By comparing the information in the two texts on the same topic, subjects could completely understand the text. This explanation is consistent with

Anderson and Pearson's argument (1988) that the reader's schemata, or knowledge already stored in memory, function in the process of interpreting new information.

# 5

## FUTURE RESEARCH AND IMPLICATIONS

### 5.1 Introduction

Experimental research like my study often serves two different, but related purposes: first, it seeks to uncover relatively unexplored areas about which little is known and typically raises questions that often trigger further inquiry; second, it provides a basis for pedagogical suggestions and practical applications that can be employed in the classroom. Thus, this chapter has two parts: (1) it suggests possibilities for future research and (2) it draw implications for applications in EFL reading classrooms, with a special emphasis on the Chinese EFL reading context.

### 5.2 Suggestions for Further Research

The major objectives of this research were: (1) to examine whether previewing is superior to background knowledge for a text type other than narrative, (2) to examine whether information rehearsal enrich prereading activities so as to enhance the efficacy of preview and background knowledge, (3) to examine whether the facilitative effect of schemata on reading comprehension increased when schemata are enriched,

In its attempt to answer these questions, the study also raises more questions for future research in the area of schema theory, information rehearsal and ESL/EFL reading comprehension.

1. The superiority of background knowledge over previewing in the first test suggests that background knowledge is better for maximizing students' comprehension of documentary narrative. Further research should explore the differential effectiveness of previewing and background knowledge for specific text types (genres of expository or narrative or combination of two). Only through more research that considers of different genres covering different content will we gain a clearer understanding of the effects of preview and background knowledge on reading comprehension.

2. A limitation of this study is that the effect of information rehearsal on the efficacy of prereading activities was investigated only two weeks after carrying out the two prereading activities. We do not know whether the effect of information rehearsal on prereading activities strengthens or weakens over a longer period. In the future, a quantitative study should also be done with several months or a period of one year to investigate the long-term effect of information rehearsal on the efficacy of prereading activities.

3. The superiority of previewing over background knowledge in the delayed test suggests that information rehearsal was more effective for Preview which provided general information on the target text than for the Background Knowledge that provided more detailed information. Further research is needed with various levels of information rehearsal covering different prereading activities to better understand whether

information rehearsal has a differential effect on the efficacy of different prereading activities.

4. One characteristic of this study shared with other studies is that some students performed worse in the delayed second test. Even so, I do not doubt the value of information rehearsal and schemata in improving reading comprehension. The fault lies not in providing information rehearsal or schemata but in the complex phenomena in the actual behavior of readers. Therefore, further research needs to investigate how the process of reading takes place in *individual* readers by asking them to describe either orally or in writing what they are thinking as they read.

5. Narrow reading refers to reading that is confined to a single topic or to the texts by a single author ( Krashen, 1981:23). Within the data, one factor is not clear. I am not sure if the same topic of the texts or the particular style of a single author contributed to the three groups' better comprehension in the delayed test. I remind myself not to be like the six blind bards of India who described an elephant six different ways, each according to the part within his reach. Therefore, I do not want to overstate the function of domain knowledge in the delayed test, even though my study was designed to focus on prior knowledge of text content in reading comprehension. Therefore, an important further area for empirical study is to what extent domain knowledge contributes to comprehension of rhetorical patterns and to what extent information from rhetorical patterns contributes to comprehension of content.

6. Finally, the subjects under investigation were moderately proficient in English. All of them passed Band Three mimic examination and they represented a

fairly homogeneous group in terms of their language proficiency. A study that examines students across different English proficiency levels would also be worth undertaking.

### **5.3 Implications and Applications for EFL Reading Classrooms**

I now consider implications of this study for ESL/EFL reading teachers particularly in China. So as not to overstate teaching implications based on only one experiment, I set up two caveats for suggestions made on teaching reading in English: 1) Although these suggestions are based on classroom-based experimental research, pedagogical research is needed to establish their efficiency in a variety of pedagogical settings. 2) There are potential differences in how these suggestions might apply at different levels of proficiency. The research conducted in this study suggests several directions for the teaching of reading. I group them under the following headings 1) Materials selection and reading programs 2) Key vocabulary instruction 3) Prereading activities. I will make special references to the needs for teaching EFL reading in China.

#### *5.3.1 Materials Selection and Reading Programs*

In my study, the results, in conjunction with Stanovich's findings (1998), demonstrate that the more students know about a topic, the more they get out of a text and therefore, the more motivated they are to learn. Stanovich (1998) calls this the Matthews effect, after a passage in the New Testament that essentially says that "the rich get richer and the poor get poorer." In other words, students with a rich base of domain knowledge do better in reading comprehension. In addition, according to Carrell and Eisterhold (1988) schemata which are repeatedly accessed and expanded, result in increased comprehension. Thus, research suggests that teachers of ESL/EFL select

reading materials on the same topic. According to Krashen (1981: 23), any text comprehension depends on some relevant prior knowledge. To some degree, well-chosen texts, can, in themselves, build readers' knowledge base.

EFL/ESL teachers therefore, should make an effort to have their students read content continuous, rather than content discontinuous texts. For example, in my study, having appropriate background knowledge gained from reading the first text of how and why people from different countries immigrated to the U.S after the discovery of America served as background knowledge to be drawn upon for reading the second text. The more one learns about a subject, the easier subsequent reading in the subject becomes. This is supported by Krashen's (1981:23) claim that "narrowing reading, and perhaps narrow input in general, is more efficient for second language Acquisition." A related suggestion is to choose a suitable text that allows students to read in depth in a content area, rather than providing short and varied selections which usually cause frustration for EFL students because they have to adjust to different authors' styles and different specialized vocabularies of the topic.

Given the fact that narrow reading and content background knowledge are important, there are two ways to develop these in reading programs:

1. A "narrow reading" program (Krashen 1981:23) can be set up whereby students focus on a single topic or author. In such focused-reading activities, repeated exposure to vocabulary items, syntax, and content facilitates reading improvement (Kyongho & Nation, 1989). The university library (stocked with popular magazines, textbooks, articles, etc.) can be used for such a "pleasure reading" curricula components. It also has the additional advantage of allowing each student to progress at

his or her own rate, to develop schemata in some area of interest, and to compile a personal record of reading.

2. In China, the important role played by background knowledge of discipline-specific content domains is being increasingly recognized by those involved in teaching English for Special Purposes (ESP). Therefore, another way to organize a second/foreign language reading program is through content-centered instruction. Such instruction would involve a conscious effort to set up basic theme-English for specific purposes courses for particular academic or occupational groups (e.g., courses for nurses, courses for tax majors).

### *5.3.2 Key Vocabulary Instruction*

Preteaching vocabulary, which is key to understanding a text, has proven effective in background knowledge in the short term context. My finding supports the suggestions of Carrell (1988c: 242) that an important part of teaching background knowledge is teaching the vocabulary related to it, and conversely, teaching vocabulary may mean teaching new concepts, new knowledge. Knowledge of vocabulary entails knowledge of schemata in which a concept participates.

However, merely presenting a list of new or unfamiliar vocabulary items to be encountered in a text, even with definitions appropriate to their use in that text, does not guarantee the induction of new schemata (Carrell 1988c: 243). In the Hudson (1982) study (see Chapter Two. P.24), the prereading vocabulary activity was the least effective of all three types of reading activities at all proficiency levels for inducing appropriate schemata. The vocabulary activity consisted of giving students a list of



vocabulary items which would appear in the reading passage, allowing time for the list to be read silently, and then going over it aloud, item by item, with definitions given for each item.

In comparison with the preteaching vocabulary used by Hudson (1982), in my study, selecting key concept words and difficult words and phrases has proven an effective means of preteaching vocabulary. Key concept words refer to the words that carry key cultural meanings. For example, if a student does not understand that "passage money" refers to the cost of a long journey by ship, then he/she will find the later discussion of the story about the passengers being bought totally incomprehensible. In this case, preteaching of culture-specific phrases like *Passage Money* before reading comprehension is absolutely necessary and effective. In my study, difficult words and phrases refers to vocabulary and phrases that I predicted would cause difficulties because of the Chinese students' limited understanding of more archaic English. For example, in the story, students were expected to have difficulty with phrases like *weigh their anchor* (pull up the anchor and move off), and *fare the worse* (to experience the most difficulty). The meanings of the words *fare* and *weigh* in these contexts are likely to be incomprehensible to many Chinese students who know only that *fare* refers to the price a passenger has to pay to be conveyed by bus, train, etc. or the cost of a range of food provided by a restaurant; and *weigh* refers to a measure of how heavy something is by means of scales, etc.

Therefore, a related suggestion in preteaching vocabulary in reading pedagogy is that vocabulary preteaching should not be based on lexical difficulty or frequency, as it's often the case in China. Instead, vocabulary items selected for preteaching instruction should be specialized specialized vocabulary which teachers predict will

cause difficulties for most students, or words that carry cultural meanings relatively unfamiliar to most Chinese students.

### *5.3.3 Prereading Activities*

The existing reading materials for College non-English majors in China include plenty of prereading exercises, usually in the form of prefacing the reading text with information-seeking, or prediction questions for the reader to keep in mind while reading. These prereading activities are intended to motivate students to read for a purpose what follows; for example, to gain the information necessary to answer questions. These are also intended to get the student to predict what the text will be about. However, even if the prereading exercises perform these two functions, in many reading situations they are too limited to suffice as the only type of prereading activities, and they will not do much toward building background knowledge in the reader.

1. My findings show the value of background knowledge in immediate comprehension when it provides a combination of concrete information and visual representations of geographic places. EFL/ESL teachers are therefore encouraged to design instructional multimedia materials to aid in text comprehension. The instructional multimedia materials could be presented in textual form, visual form, auditory form, or in any combination of presentation modes to build "external connections" (Mayer 1989). For example, for vocabulary acquisition a picture may be a good choice in depicting an individual word that represents an object mentioned in the text.

2. The more interesting finding of my study is however, that as opposed to the first test, in the second test, the preview group was more effective than the background knowledge group although both groups were significantly better than the control group. Therefore, EFL teachers are encouraged to provide preview activities to help students build up background knowledge and keep it in long-term memory. Preview is particularly useful for Band Three students who have greater English proficiency and are no longer as susceptible to vocabulary and structure difficulties in reading. These more proficient students should be encouraged to do more global, predictive processing in the top-down processing mode. In accordance with a long-range goal as Chinese EFL teachers, previewing should be encouraged to enhance the store of prior knowledge so that students become more effective, more strategic and more self-reliant readers.

#### **5.4 Concluding Statements**

The research findings of this study not only shed light on the effect of previewing and background knowledge on Chinese EFL reading comprehension, they also direct our attention to the interaction of prereading activities and information rehearsal in helping readers to build up background knowledge and retain it in long-term memory for reading comprehension. Indeed, much more research is needed before one can adequately address the effects of preview and background knowledge with different genres of text and the contribution of information rehearsal to the efficacy of preview and background knowledge. Nevertheless, a study such as this one both contributes and acts as a stimulus to further exploration of these related topics.

My greatest wish is that this study will inspire Chinese EFL teachers to help students to build their background knowledge by providing prereading activities in

awareness of the necessity to elaborate on the prereading activities by information rehearsal in a variety of relevant activities. At the same time, I hope this study will remind them to be more sensitive to their students' reading problems arising from a lack of cultural background knowledge and expertise, and more willing to develop their students content schemata which will benefit them not only while they are in their charge, but longer after their scholastic education ends.

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## Appendix A

### Preview for Experimental Group A

*Part One:* (1 minute for students to read this part)

During the 18th century and in all the years since the discovery of America, people have poured into America, because they believed that America was a "gold mountain." Therefore, from the very beginning, in spite of dangers and difficulties in the sailing vessels, people never stopped coming to America. Can you imagine how it was when the early immigrants came to America?

*Part Two:* Directions: Break into 5 or 6 groups to discuss the following question. (5 minutes for students to have a discussion)

Based on the passage above, consider the early immigrants who first came to America in sailing vessels. What was their journey like?

*Part Three:* (2 minutes for students to read this part)

The story which you are going to read is about early immigration in the 18th century. In the last four hundred years, people have immigrated to America from every part of the globe. The people in the United States right now come from every country in the world and every major language is spoken there. Early immigration of people to

America was full of difficulties and dangers. In the text which you are about to read, the author refers to Gottlieb Mittelberger's story about horrible conditions in the sailing vessels; the passengers were crowded together so densely that it was impossible for them to move about to breathe clear air. And also, the voyage usually took as long as several months, and there were no refrigerators available at that time on board the sailing vessels to preserve the food. So, can you imagine what the condition of the food and water was like on the sailing vessels? As well, many people immigrated to America without the money to pay for their voyage, so what do you think happened to them at the end of voyage? And why did some ill people die on the sailing vessels after these vessels had reached their destination?

(Teachers will collect all the prereading materials from students before they start the reading comprehension test.)

### **Background Knowledge Passage for Experimental Group B**

*Part One:* (2 minutes for teachers to show the map to the students)

The text which you are about to read has been selected from an article in the book *We, the People* which is a collection of historical stories of immigration to America. The book was published in 1947. The text which you are going to read includes the records of some people's personal experiences of early immigration. You will find their stories are very interesting. Well, since their stories introduce a wide geographic area, which will not be familiar to all of you, I would like to show you a map of the world on the blackboard.

Directions for Teachers: (A map of the world should be used to locate the Netherlands, England and France for students and to point out the important harbours of these countries, such as Amsterdam, Rotterdam, Liverpool, Dover and Le Have. In America, the area of the thirteen original colonies should be pointed out. The territory stretches from Maine in the far Northeast to the Western edge of Pennsylvania and to the southern end of Georgia. This was the United States after the War of Independence from the English.)

*Part Two:* (4 minutes for students to write the answers)

Directions: You are about to read a story. You have the opportunity to demonstrate what you know about words or phrases which are important to understanding the story. Write down what you know about each of the following words or phrases. If you are not able to write down a full sentence, use a phrase or a single word. You may write your answers in either English or Chinese.

1. Norsemen

2. to cross the ocean in the Queen Mary or the Queen Elizabeth

(What does the Queen Mary or Queen Elizabeth refer to ?)

3. weigh their anchor:

4. high German people:

5. Passage money:

6. bind themselves in writing:

7. Cowes:

8. Pennsylvania:

9. Rotterdam:

10. fare the worst:

*Part Three: (2 minutes for students to check the answers)*

Directions: You are required to read the suggested explanations below of words and phrases and check your own responses against them.

1. Norsemen: the ancient Scandinavians; here the reference is to the Scandinavian pirates who reached northeastern America .
2. the Queen Mary or the Queen Elizabeth: both are British transatlantic passenger ships travelling on a regular route, and generally considered to be the largest passenger ships ever built.
3. weigh their anchor: pull up the vessel's anchor and move off.
4. high German people: Spoken German has two principal forms, used in different regions of Germany. "Low" German is spoken in the lowlands of northern Germany. " High" German is spoken in the "high" or mountainous regions of central and

southern Germany. The Germans in the text came from the central and southern regions of Germany.

5. Passage money: the cost of a ticket for a journey from one place to another by ship or by plane.
6. Bind themselves in writing: legally agreed to enter a period of servitude on arrival. .
7. Cowes: a town on the Isle of Wight, England.
8. Pennsylvania: A state in the eastern United States. It is a leading iron and steel producer and provides nearly all the country's hard coal.
9. Rotterdam: a seaport in the southwestern Netherlands
10. Fare the worst: to experience the most difficulty

## Appendix B

### Text One and Test One

(You are allowed 35 minutes to read the following text carefully. After you have read the text, read the directions for answering both multiple-choice questions and true or false questions. )

#### *Text One*

From its very beginnings America has been a magnet to the people of earth. They have been drawn to its shores from anywhere and everywhere. This magnet, three thousand miles wide and fifteen hundred miles long, has attracted every type and variety of human being: white people, black people, yellow people, brown people; farmers, miners, adventurers, soldiers; rich people, and poor people.

First came the Norsemen; then an Italian sailor on behalf of Spain; then another Italian sailor on behalf of England; then Spaniards, Portuguese, English, French; then an English sailor for Holland. All of them discovered parts of America, then raised their country's flag and claimed the land. They returned home and told stories (some of them true) of what they had seen. People listened, and believed and came. Millions came within three hundred years, sometimes at the rate of a million a year.

This unique immigration of peoples was not accomplished without difficulties and dangers. To cross the ocean in the Queen Mary or the Queen Elizabeth, steamships over nine hundred and seventy-five feet long weighing over eighty thousand tons, is one thing. But to cross the Atlantic in a sailboat perhaps ninety feet long and twenty-six feet wide, with a tonnage of only three hundred was quite another thing. For over two hundred years, the earlier immigrants poured into the United States in just such boats as these. Remember, too, that in those days there were no refrigerators; fish and meat had to be salted to be preserved, and very often the crossing took so long a time that all the food rotted.

Here is part of a letter written by Johannes Gohr and some friends, describing their trip from Rotterdam to America in February, 1732: "It took us 24 weeks to come from Rotterdam to Martha's Vineyard. There were at first more than 150 persons--more than 100 died. To keep from starving, we had to eat rats and mice. We paid from 8 pence to 2 shillings for a mouse, 4 pence for a quart of water."

Gottlieb Mittelberger was an organist who came to his country (America) in 1750 in charge of an organ which was planned to reach Philadelphia. Here is a part of his story:

"Both in Rotterdam and Amsterdam the people are packed densely, like herring, in the large sea vessels.

When the ships have for the last time weighed their anchor at Cowes, the real misery begins, unless the ships have good winds, they must often sail 8, 9, 10 or 12 weeks before they reach Philadelphia. But with the best wind the voyage lasts 7 weeks.

That most of the people get sick is not surprising, because in addition to all other hardships, warm food is served only 3 times a week, the rations are very small. These meals can hardly be eaten on account of being so unclean. The water which is served out on the ships is often very black, thick and full of worms, so that one can not drink it without loathing, even with the greatest thirst. Oh, of course, one would often give much money at sea for a piece of good bread, or drink of good water if it could be had. I myself experienced that sufficiently, I am sorry to say. Toward the end we were compelled to eat the ship's biscuit which had been spoiled long ago; Great hunger and thirst forced us to eat and drink everything, but many did so at the risk of their lives.

When the ships have landed at Philadelphia after their long voyage no one is permitted to leave them except those who pay for their passage or can give good security; the others who cannot must stay on board the ships till they are purchased, and are released from the ships by the purchasers. The sick always fare the worst, for the healthy are naturally preferred and purchased first, and so the sick must often remain on board for 2 and 3 weeks, and then die, whereas if he could pay his debt and was permitted to leave the ship immediately, might recover.

The sale of human beings in the market on board the ship is carried on thus: Everyday Englishmen, Dutchmen, and high German people come from the city of Philadelphia and other places.

They go on board the ship which offers passengers for sale, and they select among the healthy persons such as they think suitable for their business; they bargain with them how long they will serve for their passage money, for which most of them are still in debt. When they have come to an agreement, it happens that adult persons bind



themselves in writing to serve 3, 4, 5 or 6 years, for the amount due by them varies according to their age and strength. But very young people, from 10 to 15 years must serve until they are 21 years old."

The last part of this letter is particularly valuable, because it introduces us to a system then very common. Many of the people who wanted to come to America didn't have the money to pay for their passage. They therefore agreed to sell themselves as servants for a period of years to whoever would pay their debt to the captain of the ship.

Isn't it amazing that in spite of shipwreck, rotten food, vermin, sickness, people continued to come by the thousands?

### *Test One*

#### Multiple Choice Questions

Directions: For each question, there are four choices marked a, b, c, and d. You should decide on the best choice and mark the corresponding letter on the Answer Sheet with a single line through the center.

1. Which of the following statements best summarizes the text?
  - a. The people got the idea to go to America and they crossed the Atlantic when immigration began.

- b. The condition of food on board the ships was terrible and the sick and wretched died on board when the ship had already reached its destination.
- c. In the 18<sup>th</sup> century, people immigrated to America from every part of the globe, they crossed the Atlantic in crowded sailing vessels.
- d. The early immigration of people to America was full of horrors in the sailing vessels and included the sale of human beings in America.

2. Which of the following was not one of the experiences of early immigrants?

- a. Crossing the ocean on the Queen Mary or the Queen Elizabeth.
- b. Having to eat unclean food and drink impure water.
- c. Having to live in overcrowded cabins.
- d. Sailing on vessels only ninety feet long and twenty-six feet wide.

3. Which of the following countries did the sailing vessels for the last time depart from?

- a. Spain
- b. England
- c. Germany

d. the Netherlands

4. Which of the following statements is true?

- a. When the immigrants arrived in America, they were forced to sell themselves to work as servants for several years to get their passage paid.
- b. When the immigrants arrived in America, they voluntarily sold themselves to get their passage money returned.
- c. When the immigrants arrived in America, all signed written contracts to sell themselves to get their passage paid.
- d. When the immigrants arrived in America, all were sold for several years in exchange for passage money to America.

5. Why were some passengers kept on board the ships after they had arrived in America?

- a. The passengers preferred the ships to the unfamiliar city.
- b. The passengers could not pay for their passage or guarantee that they could pay in the future.
- c. The passengers were ill.
- d. The government needed to give the passengers passports.

## True or False Questions

Directions: For each statement, there are two choices marked "T" (true) or "F" (false). You should decide on the better choice and mark the corresponding letter on the Answer Sheet with a single line through the center.

1. After the discovery of America, especially during the 18<sup>th</sup> century most of the early immigrants came primarily from eastern Europe. (T/F)
2. Many people came to America because they had heard the stories from those who had been there and returned. (T/F)
3. The food on board the ship quickly became rotten and there was always enough. (T/F)
4. The sick would die on board the ship which had already landed because they were not in good condition for someone to buy them.
5. Because the captain of the ship wanted the money for the trip, the passengers could not leave the ship unless they were bought (T/F)

## **Text Two and Test Two (Two Weeks Later)**

The text you are about to read is a continuing part of the text you read two weeks ago (You are allowed 35 minutes to read the following text carefully. After you have read

the text, read the directions for answering both multiple-choice questions and true or false questions. )

### *Text Two*

By 1876 nearly all the immigrants came in large steamships which took only seven to twelve days to cross, instead of that number of weeks in a small sailing vessel, as was the case before this time. But the steamship conditions proved no pleasure cruise for steerage passengers. Edward A. Stainer tells the story of his voyage in the early 1900's.

"There is neither breathing space below nor deck room above, and the 900 passengers in a ship with the cheapest tickets crowded into the part of a ship below decks... are actually packed like cattle, making a walk on the deck when the weather is good, absolutely impossible, while to breathe clean air below in rough weather when the hatches are down, is an equal impossibility. The stench becomes unbearable, and many of the immigrants have to be driven down; for they prefer the bitterness and danger of the storm to the pestilential air below..."

"The food, which is miserable, is given out of very big kettles into the dinner pails provided by the steamship company. When it is distributed, the stronger push and crowd, so there is no order when meals are served. On the whole, the steerage of the modern ship ought to be condemned as unfit for the transportation of human beings."

And a woman investigator for the United States Immigration Commission reported in 1911:

"During these twelve days in the steerage I lived in a disorder and in surroundings that offended every sense. Only the fresh breeze from the sea overcame the sickening odors. .... There was no sight before which the eye did not prefer to close. Everything was dirty and unpleasant to handle. Every impression was offensive."

Now obviously no human being would go through the hardships described above unless they had very good reasons. The end of the journey would have to promise a great deal to make it worth the sorrow of parting from relatives and friends, from all the fun, comfort, and security of home. It's not easy to "pull up stakes." and most people are apt to think a very long time before they do so. Then what made these millions and millions of people seek homes in a distant land?

Most of the immigrants came because they were hungry--hungry for more bread and for better bread. America offered that. Europe was old; America was young. European soil had been farmed for many years; American soil was almost untouched. In Europe the land was in the hands of a few people, the upper classes; in America the land was available to all. In Europe it was difficult to get work; in America it was easy to get work. In Europe there were too many laborers looking for the few available jobs, so wages were low; in America there weren't enough laborers to fill the available jobs, so wages were high.

Not only was this land very extensive, but it was also very good. Here was some of the best farm land in the entire world; the climate and soil suitable for the production of every product of the temperate zone and for the grazing of millions of cattle; here were rivers thousands of miles long to water these fertile valleys; here were gold, silver,

copper and all the abundance of nature was to be had for almost nothing. Off to America!

Here was a poor peasant living on someone else's land, in a miserable hut with a leaky roof and no windows; or a person paying heavy taxes without having anything to say in governing his country; or perhaps someone who wanted to work but could not find anything to do, so that there was always too little to eat and no prospect of ever getting enough; if such people saw no hope of ever getting out of the debt they were in as long as they stayed where they were, naturally they would jump at the chance to move to a place described in this manner by a person who had seen it with his own eyes:

"Provisions are cheap in Pennsylvania. The people live well, especially on all sorts of grain, which thrives very well because the soil is wild and fat. They have good cattle, fast horses, and many bees. Even in poorest houses in this country, there is no meal without meat, and no one eats the bread without the butter or cheese."

Of course there did come a time when most of the free land in America had been taken up. But still the immigrants poured in. James Watt had perfected his steam engine, and many other inventions followed, which changed the World's way of making things. America was changing from a farm to a workshop. Unlike the former immigrants, the new immigrants came primarily from southeastern Europe: Italy, Russia, Austria, Hungary, Poland. The new immigrants came not to cultivate the land as in the past, but to work in the factories. As America changed from a farming country to an industrial country, labor moved from places where it was abundant and cheap, to places where it was scarce and dear. American manufacturers sent agents to all parts of the world to get

men to work for them. America needed workers. Workers in Europe and other places needed jobs. Jobs were waiting in this new world. To America!

People came, found land and jobs; at last they had enough to eat. Of course they described their good fortune in the letters they wrote to their relatives and friends at home. Everyone is interested in the adventures of those who leave home, and these letters were passed from hand to hand and eagerly read by all. A letter from America was an exciting event. Very often the people of a whole town would get together to hear some one read a letter from a friend in America and some of the letters were highly colored, a little bit of truth and great deal of imagination mixed together. An amusing story is told of an immigrant just landed, who saw a twenty-dollar gold piece on the ground, and , instead of bending for it, kicked it away with his foot.

Someone asked him: "Why did you do that? Don't you know that is real gold?"

"Of course," he replied, "but there are huge piles of gold in America to be got for the taking, so why should I bother with one piece!"

Very often the envelope that carried the letter contained also the passage money for those back home who were still hesitant or who had no money. Here was real proof of success to be made in America. On the one hand, letters describing the abundance of good things in America; on the other hand, food becoming more and more scarce. The result was immigration, despite dangers and difficulties. Off to America!



## *Test Two*

### Multiple Choice Questions

Directions: For each question, there are four choices marked a, b, c and d. You should decide on the best choice and mark the corresponding letter on the Answer Sheet with a single line through the center.

1. The main reason people immigrated to America was
  - a. Europe was old
  - b. Taxes were not as high in America.
  - c. They were dissatisfied with where they came from.
  - d. They wanted more bread and better bread.
2. The reason why the passengers preferred to stay on deck was
  - a. at least the air was breathable.
  - b. up above, the stench was terrible
  - c. at least they could walk around.
  - d. down below, they could overcome the sickening odors.

3. According to the description of a man who had seen America with his own eyes,  
people in America
  - a. lived on meat.
  - b. Had all sorts of grain and plenty of meat.
  - c. had lots of grain but no meat.
  - d. did not have any poultry.
4. According to the text, "pull up stakes" refers to
  - a. seek a place where one can live and work.
  - b. Leave a place where one has lived or worked.
  - c. Live in a place in which one has not lived or worked before.
  - d. forget a place in which one has lived or worked.
5. Letters from immigrants to their friends and relatives at home often
  - a. discouraged immigration to America.
  - b. encouraged immigration to America.

- c. made those people at home jealous.
- d. complained of the hard life in America.

### True or False Questions

Directions: For each statement, there are two choices marked "T" (true) or "F" (false).

**In making your decision, use your knowledge of the text you read two weeks ago** and then mark the corresponding letter on the Answer Sheet with a single line through the center.

1. By the 1870s, immigrants came in large steamships with the voyage taking less than two weeks; before that people had to travel in small sailing vessels so that the voyage usually took as long as several months. (T/F )
2. The food quality in small sailing vessels was very bad as it was for steerage passengers in large steamships because the food made immigrants ill and there was never enough. (T/F)
3. The former immigrants who came primarily from northeastern Europe- England, Germany, Scandinavia became farmers; the later immigrants who came from eastern and southern Europe, worked in factories in the rapidly growing cities. (T/F)
4. The story about the recent immigrant who refused to pick up a twenty-dollar gold piece indicates the unrealistic expectations immigrants had. (T/ F)

5. "Here They Come" could be suggested as the title of the two texts. (T/F)

## Appendix C

### Three Groups of Ten Words and Phrases

- (a) Key concept expressions in this study refers to the words which carry key cultural meanings. Four key concept expressions *Norsemen*, *to cross the ocean in the Queen Mary or the Queen Elizabeth*, *passage money* and *high German people* in the text are explained in the background knowledge passage.
- (b) Difficult words and phrases in my study refers to vocabulary and phrases that I predict will cause difficulties because of the Chinese students' limited understanding of more archaic English expressions. Three difficult phrases' *Weigh their anchor*', *bind themselves in writing*' and *fare the worst*' are explained in the background knowledge passage.
- (c) Geographic words refers to departure places of early immigrants in west Europe and the destination of early immigrants in America which are important to understanding the text and also unfamiliar to most Chinese students. Three geographic words *Cowes*, *Pennsylvania* and *Rotterdam* are explained in the background knowledge passage.

## **Appendix D**

### **Instructions to the teachers in China for Conducting Prereading Activities**

(Literal translation of Chinese Version)

About 30 students should be randomly selected from each of the three intact classes into three groups (Group A, B & C). Group A and Group B are experimental groups; Group C is a control group. The two experimental groups receive prereading treatment, each of the prereading treatment lasts 10 minutes and is carried out immediately before the first reading comprehension test. Experimental group A receives preview treatment, experimental group B receives background knowledge treatment; the control group C will not receive any prereading treatment before the first reading comprehension test.

On the day of conducting the prereading activities, the three groups of subjects will be randomly assigned to three different rooms. Each group should be randomly assigned to a different condition. An administrator can be randomly assigned to supervise subjects activities, while the two English teachers are carrying out the preview and background knowledge. It should be noted that the English teacher in the control group will not carry out any prereading activities. The subjects in the control group can begin the reading task immediately after receiving the text.

In the preview condition, the English teacher gives students introductory information about the upcoming text by setting purpose questions and guiding students to have a discussion. Preview material includes specific directions for administering the preview and the time for each procedure.

In the background knowledge condition, the English teacher first draws a map of the world on the blackboard and locates the Netherlands, England and France for students and points out the important harbours of these countries related to the content of the text and then provides culture-specific phrases and difficult phrases which are key to understanding the target text.

After teachers finish carrying out the prereading activities, all the prereading materials will be collected from students before they start the first reading comprehension test.

### **Directions for the First Reading and Test and Second Reading and Test**

( Literal Translation of Chinese Version )

In the first test, all the subjects in groups (A, B & C) are required to read the text and complete a 10 item criteria test measuring reading comprehension in the form of multiple-choice questions and true or false questions in 35 minutes (see specific directions in the examination paper).

The second test will be administered 2 weeks after the first test in which none of the groups A, B & C have prereading activities. The reading material employed in test 2 is a continuing part of text one. In the second test, all the subjects in groups A, B & C

are required to read the text and complete a 10 item criteria test measuring reading comprehension in the form of multiple-choice questions and true or false questions in 35 minutes (see the specific directions in the examination paper.)

It should be noted that when students are required to do T/F questions. Don't forget to remind them to use their knowledge of the text they read two weeks ago to make their choice (see directions for True or False questions).



## Appendix E

### Answer Sheet

Name \_\_\_\_\_ Scores \_\_\_\_\_

1. Multiple Choice Questions (5 scores, 1 score for each item )

1). a b c d    2). a b c d    3). a b c d    4). a b c d    5). a b c. d

2. True or False Questions (5 scores, 1 score for each item )

1). T/F    2). T/F    3). T/F    4). T/F    5). T/F